PROVINCE OF BRITISH COLUMBIA

Eleventh Report of the

DEPARTMENT OF HEALTH AND WELFARE

(HEALTH BRANCH)

(Sixtieth Annual Report of Public Health Services)

YEAR ENDED DECEMBER 31ST

1956

VICTORIA, B.C.
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1957

OFFICE OF THE MINISTER OF HEALTH AND WELFARE,
VICTORIA, B.C., January 11th, 1957.

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

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to present the Report of the Department of Health and Welfare (Health Branch) for the year ended December 31st, 1956.

ERIC MARTIN,
Minister of Health and Welfare.

DEPARTMENT OF HEALTH AND WELFARE (HEALTH BRANCH),
VICTORIA, B.C., January 11th, 1957.

The Honourable Eric Martin,
Minister of Health and Welfare, Victoria, B.C.

SIR,—I have the honour to submit the Eleventh Report of the Department of Health and Welfare (Health Branch) for the year ended December 31st, 1956.

I have the honour to be,
Sir,
Your obedient servant,

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

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(HEALTH BRANCH)

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Eleventh Report of the Department of Health and Welfare

(HEALTH BRANCH)

Sixtieth Annual Report of Public Health Services

YEAR ENDED DECEMBER 31ST, 1956

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

In accordance with the practice of recent years, this volume consists of reports written by the heads of the various bureaux and divisions which make up the Health Branch. Although the reader is referred to those reports for the details of any one service and its programme, some general observations may be made, as follows:—

During 1956 there was steady progress in the public health programme as a whole. However, a larger than usual number of changes among senior professional and administrative personnel added considerably to the normal load of providing service.

According to preliminary figures, British Columbia's birth rate continued at a high level in the Province during 1956 and the death rate changed only slightly from the previous year's figure. The excess of births over deaths (the natural increase) amounted to about 22,400.

The preliminary figures also indicate that there was a reduction in the mortality rate from the two leading causes of death—diseases of the heart and cancer. There was little change in the death rate from the third leading cause—vascular lesions of the central nervous system. These three causes accounted for approximately two-thirds of all deaths in the Province. These were mainly in the older age-group.

Accidents were the fourth leading cause of death, when all ages are considered, and were the leading cause between 1 and 39 years of age.

It is gratifying to be able to report, once again, that there were no grave outbreaks of communicable disease. Poliomyelitis showed a marked decrease, displaying the lowest incidence since 1950. There was a definite downward trend in the tuberculosis mortality rate. The incidence of syphilis declined (although the incidence of gonorrhœa increased, following a trend displayed in certain other areas on this continent).

The labour load carried by personnel of local health services continued to increase because of the increase in population (particularly infants and younger children), the expansion in industry, and the assumption of certain tasks and services which were formerly the responsibility of the institutions. (Improved case finding and treatment in the tuberculosis programme has enabled patients to return to their homes sooner than was formerly possible. Many must be supervised and given further treatment in their homes and this has added to the labour load of the public health nurse particularly. At the same time, it has resulted in a significant reduction in the cost of sanatorium care.)

The relationships with voluntary health agencies have continued on a sound basis. Those agencies receiving financial aid from the Provincial Government have co-ordinated their programmes with those of the official health services. This has helped to avoid duplication of effort and unnecessary expenditures.

In many places throughout this Annual Report, there are references to the National health grants and the ways in which the grants have assisted British Columbia's health and hospital services to advance more rapidly. The grants themselves and the assistance and understanding of the officials of the Department of National Health and Welfare, who supervise the grants on a Canada-wide basis, are deeply appreciated.

The Deputy Minister of Health wishes also to express his deep appreciation of the support and co-operation which he has received from many individuals and organizations. These included professional groups, voluntary agencies, and other departments of government, as well as his fellow public health workers in the Health Branch.

REPORT OF THE BUREAU OF ADMINISTRATION

A. H. CAMERON, DIRECTOR

Most employees in the Health Branch, as in other organizations, find themselves engaged in administrative activities of one form or another. This is true of nurses, medical personnel, statisticians, and like groups who, although their chief responsibilities lie in fields other than administration, must, nevertheless, be administrators. However, as much as possible of the administrative burden should be taken away from such employees. In the Health Branch, the Bureau of Administration has this responsibility. Organizationally it consists of the central office staff (who deal primarily with general administration) and also the Division of Vital Statistics and the Division of Public Health Education. The Bureau is concerned with general organization, administrative procedures, personnel, accommodations, budgeting, education, training, and vital records and analyses. The following sections deal with the year's experiences (the reader is also referred to the Reports of the Division of Vital Statistics and the Division of Public Health Education which appear later in this volume):—

BRITISH COLUMBIA'S ORGANIZATION FOR PUBLIC HEALTH SERVICES

Preliminary returns from the census which was taken this year indicate that the population of the Province is about 1,350,000. This is an increase of some 45,000 over the estimate for 1955. On the basis of a Provincial area of approximately 366,000 square miles, this gives a population density of 3.7 persons per square mile, one of the lowest among the Provinces of Canada. The metropolitan areas of Greater Vancouver and Victoria-Esquimalt account for almost half of the total population. Although there are many flourishing cities throughout the remainder of the Province, there are also vast areas which are only sparsely populated. The great distances and sometimes difficult travel conditions are factors of great importance, particularly to the public health physician, the public health nurse, and the sanitary inspector.

Under the "Health Act," the Deputy Minister of Health is responsible for the organization and development of the public health services throughout the Province. Operating directly under his supervision is the Health Branch, whose organization is shown in the administrative chart at the end of this section. As the chart indicates, the Health Branch consists of central administrative and consultative services (for example, Central Offices and the Division of Public Health Engineering), the Divisions concerned with treatment and special services (for example, the Division of Tuberculosis Control and the Division of Laboratories), and the "field" staff (local public health personnel). The last mentioned are the public health physicians, public health nurses, sanitary The last mentioned are the public health physicians, public health nurses, sanitary inspectors, dental officers, and clerical workers who serve at strategic points throughout the Province outside the metropolitan areas of Greater Vancouver and Victoria-Esquimalt. These Provincial Government employees form the staff of the seventeen health units* which cover the non-metropolitan areas of the Province from the International Boundary north to the units whose headquarters are at Prince Rupert and Dawson Creek. Table I provides certain detailed information concerning the seventeen health units which comprise the Health Branch's local health services. Table II shows the offices and divisions which make up the remainder of the Health Branch.

The two metropolitan areas of Greater Vancouver and Victoria-Esquimalt operate their own health departments. Although they do not come under the direct supervision of the Deputy Minister of Health, they receive substantial financial assistance from the

* 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.

Provincial Government and, through the Provincial Government, from the Federal Government. The two areas co-operate closely with the Health Branch and their two Senior Medical Health Officers are members of the Health Officers' Council which meets twice yearly under the chairmanship of the Deputy Minister of Health.

Through either the metropolitan health departments (Greater Vancouver and Victoria-Esquimalt) or the Provincial health services, public health services are made available to practically every citizen of British Columbia. Calculations based on the non-Indian population* show that slightly more than 50 per cent of the people of the Province are served by the Provincial health Services, and slightly less than 50 per cent are served by the two metropolitan health departments.† In all, 99.5 per cent of the non-Indian population have public health services available to them.

STAFF

Table I shows that there were 261 staff positions in the seventeen health units of local health services. This represents an increase of fifteen positions (thirteen public health nurses and two sanitary inspectors) over the figure for 1955. The number of vacant positions at any one time during the year was not large.

Table II, which relates to the remainder of the Health Branch, including the institutions, shows the number of employees on staff at the end of the year rather than numbers of positions. (This method is used because there is a significant number of positions which are not being utilized, although they are included in the official establishment.) Although the number of persons employed on a particular date (the year's end in this case) is not necessarily indicative of the trend throughout the year, a comparison with the table in the 1955 Report shows that there has been considerable reduction in the staff of Tranquille Sanatorium and a slight increase in the Division of Laboratories.

The year 1956 was noteworthy for the large number of changes in senior personnel resulting from resignations, transfers, and deaths. The headquarters of the Bureau of Special Preventive and Treatment Services and that Bureau's Division of Venereal Disease Control and Division of Laboratories were most seriously affected. The sudden death of Miss Jean Gilley of the Bureau headquarters came as a great shock to her many co-workers who had come to depend on her administrative abilities. The Bureau Director suffered a serious illness at about the same time. These unhappy events necessitated a reallotment of duties and responsibilities and a general reorganization of the offices concerned. Earlier in the year the Director, Division of Laboratories, who had been with the Public Health Services on a part-time basis for some twenty years, resigned to assume full-time duties at the University of British Columbia. The Assistant Director in the same Division resigned to be married. Full-time appointments were made to both positions and it is felt that the Division's high standard of service has been maintained. However, the two resignations of the Director and Assistant Director represented great losses to the Division of Laboratories and the Health Branch as a whole and created some problems of reorganization. In the Division of Venereal Disease Control the untimely death of E. Southen, epidemiology worker, was a sad blow to the members of this Division.

The problem of recruiting and retaining staff continued to present great difficulties in certain employee-groups throughout the year. The shortage of properly qualified health nurses was such that it was possible to maintain services only by adopting special staffing policies which were not entirely satisfactory. Again the Health Branch had to employ some nurses lacking the necessary special training in public health and to provide these nurses with bursaries so that they could obtain the special training at university. Some stability of staff was achieved by virtue of the fact that such nurses are obliged (by

* The Federal Government provides services for the Indians.

† It should be noted that the Provincial Health Branch provides the special services of its Divisions of Tuberculosis Control, Venereal Disease Control, and Laboratories on a Province-wide basis which includes the metropolitan areas.

written agreement) to work for the Health Branch for two years following completion of training. It was also necessary to employ a significant number of married women. Although these married employees were properly qualified and experienced, it was difficult to transfer them to the areas of greatest need because of their family responsibilities.

The Division of Public Health Engineering has been forced to function with only two engineers throughout the year. Although the present establishment makes provision for three engineers, the nation-wide shortage in this professional group has been such that the Division has not been successful in recruiting endeavours. This situation is particularly serious because a staff of only two engineers cannot cope properly with the normal engineering tasks, let alone the responsibilities which have been added under the "Pollution Control Act." In order to include these last-mentioned responsibilities in a successful programme, it is felt that the Division should have a staff of five engineers.

A somewhat similar situation has existed throughout the year in the Division of Public Health Education, although the problem is, perhaps, somewhat less serious because the responsibilities are not imposed by Acts of legislation as they are in the case of the Division of Public Health Engineering. The Division of Public Health Education has had no success in its efforts to recruit university graduates who are qualified to take advantage of postgraduate training in public health which the Health Branch, using National health grant funds, can provide to them. Throughout the year, the Division has attempted to give Province-wide service, although there have been only two professionally qualified public health educators on staff.

Because the Health Branch had not been able to obtain additional personnel already qualified in sanitary inspection, the plan of recruiting untrained men and providing them with training opportunities was again followed. Under this plan, eight employees joined the staff as sanitary inspectors-in-training to gain the necessary practical experience and also to assist in the public health programme. At their own expense they undertook the correspondence course leading to the Certificate in Sanitary Inspection for Canada.

The provision of clerical services in the health units has long been a matter of great concern, because there was some evidence that the professional staff were devoting too much of their time to clerical tasks. With a view to developing at least a general policy, the Director of Local Health Services appointed a survey team of an administrator from the Division of Vital Statistics and a consultant from the Division of Public Health Nursing to investigate and make recommendations to him. The team visited and studied every health-unit office and sub-office in the Province. Although the report had not been submitted in final form at the year's end, there is every indication that additional clerical help is required if professional workers, particularly public health nurses, are to devote their time and energy to the professional tasks for which they are trained and so urgently needed.

ADMINISTRATIVE SURVEYS

In last year's Report reference was made to the survey of the entire Government service, which was conducted under the general direction of the Civil Service Commission. The chief purpose was a study of the efficient utilization of staff. In so far as the Health Branch was concerned, the investigations were undertaken by two survey teams composed largely of Health Branch officials. One team surveyed the institutions and the other surveyed the remainder of the Branch.

The report of the survey conducted in the institutions was completed in June, 1956. It showed that substantial reductions in expenditures on salaries had been made and that further reductions could be made through appropriate reallocation of duties, amalgamation of positions, and deletion of unused positions. Most of the recommendations have been put into effect.

The report of the original survey on the remainder of the Health Branch was completed in 1955 and was summarized in last year's Annual Report. In that survey it was

recommended that the administration of the Divisions and offices occupying the Provincial Health Building in Vancouver be studied after those Divisions and offices had had an opportunity of becoming accustomed to their new quarters. It was also recommended that further studies of the practices in health units be undertaken.

The survey of the Health Branch services occupying the Provincial Health Building was completed in January, 1956. The Divisions and offices surveyed were as follows:—

1. Headquarters of the Bureau of Special Preventive and Treatment Services:
2. Division of Venereal Disease Control:
3. Division of Laboratories.

The general conclusions of the survey report were:—

"The Provincial Health Building provides very adequate, modern accommodations to almost all of its occupants. However, in the Division of Veneral Disease Control on the ground floor, some improvements could be effected if certain structural alterations could be made.

"There is good administrative organization and control.

"The Assistant Provincial Health Officer and other senior officials in the Building appear to be giving constant attention to matters of organization and administration. They seem to be keenly aware that changing needs in the health field must be reflected in changes in administration and numbers of staff.

"It should be possible to effect some further centralization and consolidation of services, now that the several offices and Divisions are located in one building.

"There is no evidence of any serious problem of overstaffing. However, it may be possible to delete two or three positions through the consolidation of certain services and modification of certain procedures."

The report in respect to the Provincial Health Building also made many detailed suggestions concerning administrative and clerical procedures and, therefore, the effective use of employees' services. In Bureau headquarters and the Division of Venereal Disease Control, most of these recommendations have since been implemented. In the Division of Laboratories, however, consideration of some of the more important recommendations has been deferred until the new Director has had the opportunity of acquainting himself with all aspects of his Division.

In the case of the health units, the formal survey undertaken this year dealt with administrative and clerical procedures. This has been mentioned briefly in the previous section on "Staff."

Thus, during 1955 and 1956, there have been four closely related surveys of the administrative organization and procedures in the Health Branch. These surveys have dealt with the Health Branch as a whole (excluding the institutions), the institutions themselves, the services occupying the Provincial Health Building in Vancouver, and the health units.

ACCOMMODATIONS

Last year's Annual Report referred to the serious problem of overcrowding in the offices occupied by the Division of Vital Statistics in the Parliament Buildings. In an effort to alleviate this problem, at least to some extent, certain changes in the allocation of space were made toward the end of the year. The Division of Public Health Education moved some of its personnel from the second floor to the ground floor and so released three relatively small offices for the use of the Division of Vital Statistics. Although this has been a great help to the Division of Vital Statistics, it should be emphasized that it was far from an ideal solution. Personnel of the Division still suffer from overcrowding, excess noise, and the enforced utilization of too widely separated offices. In addition, the convenient and safe storage of records, particularly vital records, still presents a problem of the greatest importance.

The remainder of the Health Branch staff in the Parliament Buildings have pleasant, adequate offices, although there is no longer any room for expansion. Further, the storage room is now so crowded that space in the adjacent basement corridors must be utilized for the storage of supplies and equipment.

Changing needs in the treatment of tuberculosis indicate that in-patient services should be reduced, or even discontinued, in certain areas and increased in others. Reductions are indicated at Tranquille Sanatorium and the Vancouver Island Chest Centre. (Fifteen beds at the Vancouver Island Chest Centre have already been released to the Royal Jubilee Hospital for use as general hospital beds. This has, of course, been reflected in reduced costs to the Division of Tuberculosis Control.)

Throughout the year, the planning committee, consisting of officials from the Health Branch and the Department of Public Works, continued their studies of the proposed addition to Pearson Hospital. Although agreement has been reached in respect to the general planning, the detailed drawings have yet to be undertaken.

Space requirements at the Poliomyelitis Pavilion present an interesting problem. Although the Pavilion, which is attached to Pearson Hospital in Vancouver, was intended to accommodate fifty-five patients, experience has shown that the building is capable of housing only a somewhat smaller number. This stems from the fact that some patients require not only an ordinary hospital bed, but also a respirator and, perhaps, a rocking bed. Much of the ward space is occupied by these additional items of bulky equipment. This problem would be particularly serious if there were an increase in poliomyelitis. During the year, efforts were made to plan—although not necessarily to build—suitable storage space.

It is gratifying to note that there was a continuation of the construction programme to provide adequate office and working accommodations for the staff of local health services throughout the Province. (Under a plan introduced five years ago, the cost of constructing any one community health centre is shared by the Federal, Provincial, and municipal Governments. Service clubs and voluntary health agencies often make important contributions to the municipal share. National health grants are the source of funds for the Federal share.) During 1956, five more community health centres, including two in Greater Vancouver, were completed, bringing to twenty-two the number constructed under this plan. Similar facilities were being planned or were, indeed, partially completed in approximately twelve other communities.

TRAINING

The Health Branch is responsible for providing a wide range of services to the public. The adequacy of these services depends very largely on the professional and technical qualifications of the Health Branch employees. It is fortunate, therefore, that the Health Branch has been able to maintain an active training programme. During 1956, there were, broadly speaking, three general methods used. First, National health grants funds were used to support university training. Nineteen Health Branch employees completed postgraduate training at university and fourteen embarked upon similar training. Forty-three others attended short courses for which the cost of tuition and travel was also defrayed by the National health grants. Second, the Health Branch, in co-operation with the Department of Public Health of the University of British Columbia's Faculty of Medicine, organized a refresher course for medical health officers who had received their basic training some years ago. This enabled these key officials to gain knowledge in the newer public health developments. National health grants were used to help defray the costs. Third, the professional status of the field staff generally was improved by a concentrated series of lectures conducted over a period of four days at the Public Health Institute held immediately after Easter. Because the whole purpose of the Institute is to provide further training, and so to improve the quality of service to the public, the

speakers and discussion leaders are chosen carefully for their ability to deal with subjects which are causing some concern to Health Branch personnel. The lectures are conducted on a formal basis and attendance is compulsory. The Health Branch was fortunate this year in having as its guest speaker Dr. Charles Smith, Dean of the University of California's School of Public Health. Other speakers, from the Health Branch and from other agencies, dealt with public health law, accident prevention, stress, mental retardation, and other subjects on which public health workers must keep informed.

ADMINISTRATIVE CHART

Department of Health and Welfare (Health Branch)

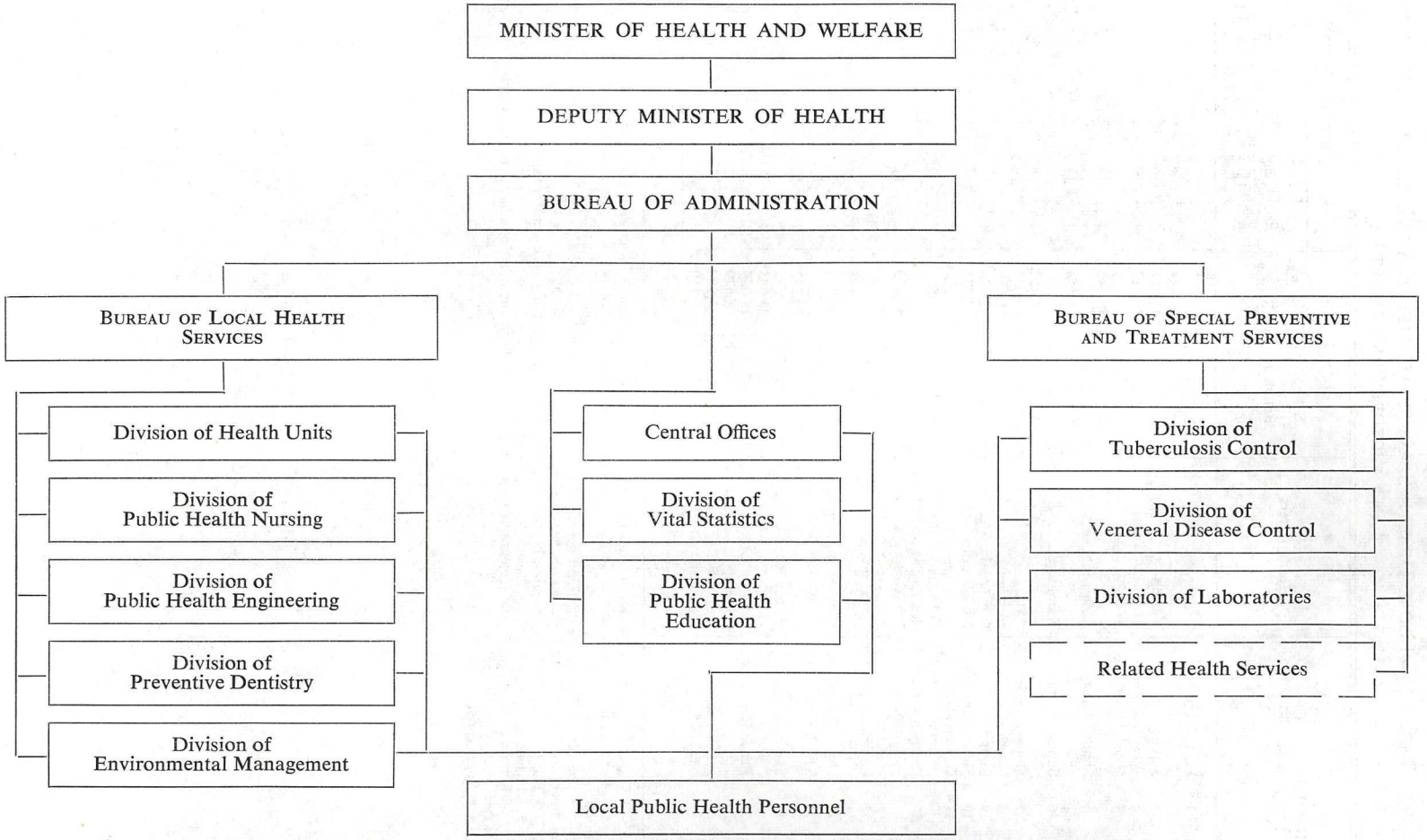


TABLE I.—LOCAL HEALTH SERVICES (OTHER THAN GREATER VANCOUVER AND VICTORIA-ESQUIMALT)

Health Unit No.	Health Unit	Headquarters	School Districts Included	Population (Excluding Indians)	Staff (Positions)[1]						
					Directors	Public Health Nurses	Sanitary Inspectors	Dental Officers	Dental Assistants	Clerks	Total
1	East Kootenay	Cranbrook	1, 2, 3, 4, 5, 18	35,556	1	9	2	—	—	1	13
2	Selkirk	Nelson	6, 7, 8, 10	21,791	1	6	2	—	—	1	10
3	West Kootenay	Trail	9, 11, 12, 13	34,817	1	10	2	—	—	2	15
4	North Okanagan	Vernon	19, 20, 21, 22, 78	36,448	1	10	2	1	1	2	17
5	South Okanagan	Kelowna	14, 15, 16, 17, 23, 77	52,134	1	14	3	1	1	3	23
6	South Central	Kamloops	24, 25, 26, 29, 30, 31	32,464	1	8	2	—	—	2	13
7	Upper Fraser	Chilliwack	32, 33, 34	47,005	1	10	3	—	—	3	17
8	North Fraser	Mission	42, 75, 76	26,666	1	6	1	1	1	2	12
9	Boundary	Cloverdale	35, 36, 37	69,986	1	14	3	—	—	3	21
10	Simon Fraser[2]	New Westminster	43	28,775	1	6	1	1	1	1	11
11	Gibsons-Howe Sound[3]	Gibsons and Squamish	46, 48	11,506	—	3	1	—	—	—	4
12	Saanich and South Vancouver Island	464 Gorge Road East, Victoria	61[4], 62, 63, 64	58,470	1	14	2	—	—	3	20
13	Central Vancouver Island	Nanaimo	65, 66, 67, 68, 69, 70, 79	71,938	1	15	3	1	1	4	25
14	Upper Island	Courtenay	47, 71, 72	32,778	1	10	2	—	—	3	16
15	Cariboo	Prince George	27, 28, 55, 56, 57, 58	50,392	1	12	3	1	1	2	20
16	Skeena	Prince Rupert	50, 51, 52, 53, 54	23,085	1	6	2	—	—	2	11
17	Peace River	Dawson Creek	59, 60, 81	18,060	1	4	1	—	—	1	7
—	—	Kitimat[5]	80	8,579	—	2	—	—	—	—	2
—	—	Ocean Falls[5]	49	3,900	—	1	—	—	—	—	1
—	—	Telegraph Creek[5]	—	110[6]	—	1	—	—	—	—	1
	Totals	—	—	—	16	161	35	6	6	35	259

[1] These figures show the authorized positions. There were vacancies in various places at various times during the year. Further, in addition to the clerks shown, part-time clerical assistance was provided in certain centres at various times.

[2] The Simon Fraser Health Unit serves also School District No. 40 (the City of New Westminster). The Director and certain other staff (not shown above) are employed by the city.

[3] The Gibsons-Howe Sound area has not yet been organized officially as a health unit.

[4] In part.

[5] Kitimat, Ocean Falls, and Telegraph Creek have not yet been included officially in health units, although a nurse is stationed in each area.

[6] Approximate.

TABLE II.—OFFICES AND DIVISIONS PROVIDING ADMINISTRATIVE, CONSULTATIVE, AND OTHER SPECIALIZED SERVICES

Office or Division	Location	Staff[1]
Central Office[2]	Victoria	28
Branch Office[2]	Vancouver	22
Division of Vital Statistics	Victoria	61
	Vancouver	15
Division of Venereal Disease Control	Vancouver	23
Division of Laboratories	Vancouver	53
	Nelson	2
Division of Tuberculosis Control—		
Headquarters	Vancouver	15
Willow Chest Centre	Vancouver	161
Pearson Hospital	Vancouver	226
Tranquille Sanatorium	Tranquille	252
Vancouver Island Chest Centre	Victoria	11
New Westminster Stationary Clinic	New Westminster	7
Kootenay Travelling Clinic	Nelson	4
Coast Travelling Clinic	Vancouver	3
Interior Travelling Clinic	Tranquille	3
Island Travelling Clinic	Victoria	3
Poliomyelitis Pavilion	Vancouver	62

[1] Because of certain reductions made in staff during the year, this column shows the approximate number of persons employed at the year's end rather than the numbers of positions.

[2] The staffs of these offices included the Health Branch's central administrative personnel and the personnel who provide consultant services in public health nursing, sanitation, nutrition, public health education, rehabilitation, public health engineering, environmental management, and preventive dentistry.

REPORT OF THE BUREAU OF LOCAL HEALTH SERVICES

J. A. TAYLOR, DIRECTOR

Health Department administration at all levels of government, National, Provincial, or municipal, aims at the development of conditions suitable to the initiation and maintenance of maximum health for all citizens. Toward accomplishment of that goal, it is necessary that practical public health programmes be designed to meet the health needs of the people for whom they are destined; the most logical approach to this being through local health services at the municipal level, which are in more direct contact with the people and best able to determine the community health needs, the basic services required, and the methods of administering them. The National and Provincial health departments, in order to have their services attain maximum effectiveness, have a very definite interest in the organization of local health services, and provide encouragement and assistance in the form of technical, supervisory, and consultative aid, as well as financial grants.

The Bureau of Local Health Services exists at the Provincial level to guide in the development of a basic minimum standard of local health service throughout the Province, while co-ordinating the consultative and supervisory technical services provided by the various Departmental Divisions and voluntary health agencies. It serves as a link between the services designed at the National-Provincial levels and their administration at the municipal level in the form of community health services.

Local Health Services in British Columbia has become organized along the lines of health-unit administration. This provides for the organization of a full-time Health Branch to provide public health services to a number of communities and school districts which, of themselves, could not support an adequate local health service, but through unification under a Union Board of Health, aided by National and Provincial health grants, are able to do so. Equivalent full-time public health services on the local level are thus available to nearly every resident in British Columbia, regardless of location, through the seventeen rural and eight urban health units in the Province. The seventeen rural health units, serving the large interior areas of the Province, are administered more or less directly through the Health Branch, Department of Health and Welfare, while the eight urban health units operate in the Greater Vancouver and Greater Victoria areas under a metropolitan type of administration, functioning under Metropolitan Boards, which employ their own staff directly, but, nevertheless, provide the same type of public health service. Certain areas of the Province, because of the mountainous terrain, are sparsely populated and full-time local health service administration is hardly warranted; in those areas, part-time service is provided through periodic visits from a nearby health unit, or employment of resident physicians or nurses on a part-time basis.

While, in principle, the provision of local health service is a municipal responsibility, the significant contribution by National and Provincial health departments in the matter of monetary grants, has aided materially in the organization, expansion, and development of those local health services. The National health grants programme, commencing in 1948, gave a very direct impetus to health-unit organization; expansion of the existing services and development of new services become permissible through the continuation of the grants, permitting Provincial planning to meet the health needs of an expanding population.

HEALTH-UNIT ORGANIZATION AND DEVELOPMENT

The continuing expanding economy of the Province creates demands for additional public health services, since the mere fact that there are additional people to be served increases the work load on each member of the health-unit team to the degree that additional staff must be provided to cope with the increased demands. Health-unit organization is planned on a definite population basis on a formula developed around a

recognizable effective case load per member of the staff. As these case loads become exceeded, then consideration must be given to the placement of additional staff within the unit. A considerable amount of this has taken place during the year, particularly in the ranks of public health nurses and statistical clerks, and to a lesser degree in sanitary inspectors. Thus it became necessary to place additional public health nurses in the Cariboo, Boundary, Gibsons-Howe Sound, Skeena, Upper Island, South Central, Simon Fraser, North Okanagan, and Saanich and South Vancouver Island Health Units, while sanitary inspector trainee positions were created in the Selkirk and Upper Island Health Units in addition to the five such positions created a year ago. Probably the most pressing demand was in relation to statistical clerk positions in the health-unit offices and sub-offices to deal with the increased amount of office administration, record maintenance, and filing. It was found necessary to place additional clerks in the Upper Island and North Fraser Health Units on a full-time basis, while many hours of additional part-time clerical assistance was added *in toto* as each of the seventeen rural health units benefited.

Industrial developments throughout the Province are creating population increases and community growth generally, but more rapidly in some areas than in others. One of these is the community of Kitimat, which, because of expert town-planning prior to its inception, is following an orderly pattern of development. Included in the town-planning recommendations was the provision of an adequate local health service, designed on a progressive step-by-step development paralleling the population growth and community needs. A year ago, the first resident public health nurse, succeeding the previously appointed part-time nurse, took up duties in Kitimat to assist the part-time Medical Health Officer, while regular visits by a sanitary inspector from the neighbouring Skeena Health Unit were arranged. As the planned industrial growth took place and housing became available, further population increases occurred, so that an additional public health nurse appointee became necessary during this year. Plans are progressing for further industrial expansion and negotiations are under way for extension of the community medical-care programme in which preventive medical services are to assume their justifiable share. In keeping with the original community planning, negotiations will be undertaken during the forthcoming year to establish a complete full-time local health service in Kitimat, under the direction of a qualified public health physician. Certain preliminary discussion in that direction has occurred in meeting with the Hospital Administrator, the Hospital Board, the community administrator, and the present Medical Health Officer.

Another area of the Province which is experiencing a more than normal industrial expansion, with an allied population increase, is that area served by the Cariboo Health Unit. This health unit, originally designed to serve the communities of Prince George, Vanderhoof, Quesnel, Williams Lake, and the school districts related to them has, over the year, taken on the communities of Burns Lake and McBride, and the school districts centred on them. Thus, a health unit which was originally planned to provide service to about 30,000 people has now grown to provide service to 50,000 people. Because of the population density, the communities are scattered over the length of the major transportation routes, so that the unit has become a large sprawling area in which many hours of travel must be expended in the provision of public health services. Recently, the organization of yet another school district in the Chilcotin area indicates that the unit should probably expand its borders to include that rural school district formerly within the health-unit area. It does appear that the unit is attaining a size unwieldy to administer and raises the suggestion that a division be made to establish two separate administrative units in place of the present one. Certain investigations are being conducted to determine population distributions on the basis of the recent census which may give additional data indicative of the division that could be established.

School District No. 49 (Ocean Falls), which became established as a public health nursing district a year ago, experienced an interruption in service with the resignation of

the public health nurse. For a period of four months a replacement was unobtainable and the service had to be discontinued in that particular area; fortunately, the interruption coincided with the summer vacation period when schools were closed and service demands were at a minimum. With the reopening of the schools in the fall a public health nurse from one of the organized health units, with a background of experience, transferred to the Ocean Falls area and re-established the service.

It was also possible during the year to re-establish the full complement of the Peace River Health Unit, which had been operating for a year without the services of a public health physician. A physician, qualified in public health, accepted the appointment during the summer, emigrating from Ireland to Canada to take up this post. This occurred at a fortuitous time since considerable industrial development occurring in the Peace River Block will present the need for a complete local health service in keeping with the expanding community demands. The Director of the Selkirk Health Unit, with headquarters at Nelson, had for some time felt that increased interest should be concentrated in the field of mental health. He decided that he would like to direct his energy and training in that direction, but recognized that he should obtain further postgraduate qualification in the mental-health field. Consequently, he submitted his resignation in the early fall to pursue postgraduate training in the United Kingdom. As his departure came unexpectedly, it was not possible to replace him until almost the end of the year, when a young physician from Scotland arrived to take up the appointment.

While two of the physicians accepted bursaries toward public health postgraduate studies, it was, nevertheless, possible to cover their leave of absence with additional recruits, particularly in the Skeena Health Unit, so that as the year ended, all established positions requiring health-unit directors were completely staffed. This is the first time that this has been possible within the past two years. It is recognized that certain staff changes and health-unit expansion proposed for next year will effect a disturbance in this state of affairs, and that additional physicians will still have to be recruited in order to meet the demands.

The local health services within the metropolitan areas of Greater Vancouver and Victoria-Esquimalt continued to make substantial progress during the year. While these services operate somewhat independently of the direct supervision through the Health Branch, they nevertheless maintain a very excellent co-operation and participate in the annual Public Health Institute and the bi-annual meeting of the Health Officers' Council. The negotiations that have been under way in the Greater Victoria area toward amalgamation of local health services became reactivated during the year when a meeting of the various local Boards of Health was convened to review the matter. It was evident from that meeting that there was some interest in a merger of the local health services of the Victoria-Esquimalt Health Unit, the Saanich and South Vancouver Island Health Unit, and the Municipality of Oak Bay, but that there were some factors of administration and staffing that would require detailed study. Dependent upon those details was the matter of an over-all financial consideration of paramount importance, particularly to the Municipality of Oak Bay, but also to some extent to the Victoria-Esquimalt Health Unit. The meeting finalized a recommendation that a committee be struck of representatives of the various groups to prepare detailed data on those points, for consideration by the committee at a subsequent meeting. Negotiations are continuing in that direction in the hope that a merger can take place to establish a Greater Victoria metropolitan area in which there will be unification of the local health services under one administration.

ADMINISTRATION

Certain changes within the Division of Preventive Dentistry occurred during the year as the Director of the Division was granted leave of absence to undertake a dental-caries study in Malaya, under the Colombo Plan. It is anticipated that he will be absent from

his duties for a period of one year. Meanwhile the administration of the Division is being assumed on a part-time basis by the Regional Dental Director from the Fraser Valley, as Acting Director. It is anticipated that this temporary move will suffice for the interim period of leave of absence, as sufficient advance planning had been prepared to provide for continuity of administration within that Division and the Acting Director had been carefully oriented in the Divisional activities.

The major administrative problem requiring special consideration was in relation to the clerical assistance needs within local health units. The population growth within the Province led to additional professional staffs being required, which in turn creates demands for additional clerical assistance. At the same time, there seemed to be a need to review the records being used, and the manner in which they were handled. About five years ago, a study was conducted through the health units then in existence, to determine the volume and methods and use of records, following which a clerical administrative manual of procedure was prepared for the guidance of the health-unit clerks. There would seem to be some value in re-examining those recommendations to see if health-unit usage had shown them to be practical, and to revise the manual, if necessary. Further, there would seem to be some reason to determine whether the formula of one clerical worker to each four professional personnel was justified, since public health nursing time-studies revealed that the amount of non-professional clerical work being undertaken by public health nurses was steadily increasing, having risen from 4.1 per cent in 1953 to 6.6 per cent in 1955, of the time of the average public health nurse. Consequently, it was decided when an appointment was made to the vacant Public Health Nursing Consultant position that her first major job would be to conduct a health-unit clerical survey, to be assisted by the Chief Clerk of the Division of Vital Statistics who was to be loaned to the Bureau of Local Health Services for that purpose. The team has conducted a very extensive survey of the office administrations, office management, volume of records, handling of records, record needs, filing systems, office accommodation, volume of correspondence, filing procedures, stenographic requirements, and so forth. It becomes evident that the health-unit clerks perform a considerable number of functions which place an exceedingly heavy burden on them during a working-day, and that they, as the first contact with an inquiring public, have a major role to perform in the public relations of the health service. Clerks are seen to be acting as receptionist, record-clerk, file-clerk, mail-clerk, stenographer, typist, and general information clerk. The growth of public health services has increased the scope of activities performed by health-unit clerks, requiring more and more service from them to maintain a smoothly operating office. It was possible to make certain individual recommendations to the health-unit directors in respect to individual offices dealing with local phases, such as physical rearrangement of the office, readjustments in office management, and certain minor changes in office procedures. The other recommendations of somewhat greater magnitude dealt with the need for additional clerical assistance in specific offices, the provision of dictating equipment, reorganization of office administrative functions, establishment of a uniform sanitation record system, and revision of public health nursing record systems. In order to effect some of these changes, it is recommended that three special committees be struck to get the recommendations under way, namely, an administrative procedure committee, a sanitation record committee, and a public health nursing record committee. These recommendations were under active consideration as the year ended, to determine how far it would be possible for the Health Branch to effect the changes, and establish the committees. It is generally recognized, however, that the clerical survey of the health units did establish the first comprehensive analysis of the office routines, while creating a base-line on which to reorganize the office systems. Certainly, it was learned that the formula of one clerical

worker to each four professional personnel was inadequate, and the team has recommended that it would probably be more in keeping with clerical needs if the formula became one clerical worker to 3.5 professional personnel.

For some time, there has been an indication from some individual Union Boards of Health that there was a need for an annual gathering of representatives of Union Boards of Health to discuss problems which might be of common interest. Departmentally, it has been recognized that there might be some merit in the suggestion and the Health Branch has indicated a willingness to co-operate in such a meeting. The major hindrance in the proposal lies in the fact that Union Boards of Health are composed of representatives from Municipal Councils and from District School Boards, and it is difficult to determine what type of meeting could be arranged which would satisfy both representative bodies. One suggestion was that a meeting be held to coincide with the annual meeting of the Union of British Columbia Municipalities, and certain steps were taken in that direction two years ago when a meeting was convened during the Union of British Columbia Municipalities Convention in Victoria; arising from that meeting, a committee was struck to investigate ways and means of convening an annual meeting in conjunction with the Union of British Columbia Municipalities Convention, but the Executive Committee of the Union of British Columbia Municipalities did not much favour the proposal, feeling that they did not desire to foster sub-committees, preferring that the matter that might come before a sub-committee be discussed openly on the floor of the Convention. However, the South Okanagan Union Board of Health, who were the original sponsors of the proposal, felt that the matter merited further consideration and suggested that representatives of Union Boards of Health be convened in Penticton during October, when the Union of British Columbia Municipalities Convention would again be in session. Consequently, such a meeting was convened at that time, and following discussion by the members present, it was decided that an Executive Committee *pro tem.* be appointed to draft a constitution for consideration by the various Union Boards of Health toward establishing a Provincial Co-ordinating Committee of Union Boards of Health. It was further decided that another meeting should be called the following year, again in conjunction with the Convention of the Union of British Columbia Municipalities, at which time the proposed constitution could be voted upon.

Administratively, the guidance provided by two advisory groups, namely, the Local Health Services Council, composed of divisional directors meeting weekly, and the Medical Health Officers' Council, composed of all the full-time Medical Health Officers throughout the Province, meeting bi-annually, has been of significant assistance to the Bureau of Local Health Services. The Local Health Services Council, while serving to orient each of the divisional directors in all phases of local health services, has additionally given consideration to changes in policy procedures and programmes. The frequency of the meetings lends itself to their being kept acquainted with events occurring within local health services in the field, while promoting an inter-exchange of information on services within the separate Divisions.

The bi-annual meetings of the Medical Health Officers' Council were convened, as usual, in April and September. This Council, composed of the Medical Health Officers from the seventeen rural health units, the Senior Medical Health Officer from the Vancouver Metropolitan Health Service, the Senior Medical Health Officer from the Victoria-Esquimalt Health Unit, the Professor of Public Health in the Faculty of Medicine at the University of British Columbia, the Regional Superintendent, Pacific Region, Indian Health Services, acts in the capacity of an advisory group to the senior officials in the Health Branch, advancing suggestions for modification in existing policies and programmes, while introducing the need for new policies and programmes. It has now become common practice to refer such matters as proposed new legislation, new regulations, and new administrative materials to this Council for their study and comment before finalizing the details. In this way it is felt that the legislative and administrative

materials become as practical as possible to fit the field needs. In addition to their practical function in this way, the biannual conferences of the Health Officers' Council serve as a clearing-house in which exchange of ideas leads to uniformity of public health practice throughout the Province, while promoting pilot studies of new practices in specific areas. In keeping with this, there have been a number of sub-committees established to deal with specific services in which there seems to be need for constant review. Thus, there have been active standing committees established in such fields as school health services, communicable-disease control, tuberculosis practices, and others. The deliberations of these committees serve as a guide to points for discussion at future Health Officers' Council meetings in relation to modifications that may be necessary in the practical field service in those particular fields.

It has been Departmental opinion, emphasized by the Health Officers' Council from time to time, that opportunity should be presented within the service for professional growth. One method of approach to staff education is through the medium of the annual Public Health Institute at which health-unit personnel throughout the Province are convened for a period of one week, to hear discussions on the latest public health trends, presented through lectures, panels, forums, and symposiums. Each Public Health Institute is organized around a guest speaker who deals in current topics in the field of public health, and this year's gathering was no exception, since Dr. Charles E. Smith, Dean of the School of Public Health at the University of California, very capably assumed that role.

A year ago, inquiries were made of the Royal College of Physicians and Surgeons to determine if an opportunity for the examinations toward certification as specialists in public health might not be provided to candidates from Western Canada, through a Western centre. The answer was that, if there should be a sufficient number of applicants from the West, the examinations could be held in Vancouver during the present year. A poll of the employed Medical Health Officers indicated that there would be a dozen or more interested in taking the examination, and a sub-committee of the Health Officers' Council was appointed to further the proposal. The Department of Public Health within the Faculty of Medicine at the University of British Columbia organized a short series of lectures and recommended certain reference reading to assist the potential candidates in their studies toward certification examinations. Eleven physicians successfully completed the examinations, obtaining certification in public health.

In addition to the training that was offered to this group of health-unit personnel, another course was organized for the sanitary inspectors to provide them with information on plumbing. The course was developed by a master plumber, acquainted with the developing trends in plumbing installations, and an exceedingly capable instructor who was able to develop his subject clearly, and handle discussions that followed. As a result, the sanitary inspectors' group benefited materially from the two-week course, while local health services became manned by persons able to approach plumbing problems and complaints with confidence, realizing that they were possessed of the most up-to-date knowledge on that phase of sanitation services.

There were numerous other items within administration fields that took a great deal of administration time during the year. Two of these were related to sanitation, the first being in regard to milk legislation, and the second in regard to fish canneries. Numerous discussions and conferences were convened with officials of the Department of Agriculture in the designing and interpretation of new legislation in the nature of regulations required under the newly drafted and adopted "Milk Industry Act." The place of each of the people involved in inspections is more clearly defined and interpreted to prevent overlapping while rendering thorough coverage toward production of safe milk, as proposed through the Clyne Report.

In so far as the fish canneries are concerned, there has been some dissatisfaction expressed in the matter of housing, overcrowding, and sanitation for the cannery employees, particularly the native groups. This, coupled with the fact that there seems to be certain typhi and paratyphi carriers amongst that population, creating potentialities for spread of infection, leads to a desire to improve their lot, while protecting others. Thus, conferences were convened on at least three occasions during the year between representatives of the Indian Health Services, Local Health Services, cannery management, and cannery operators. Arising from those conferences was a definite programme toward improving the situation through joint efforts of the interested parties. This involved intensive immunization programmes on the part of Local Health Services, improvement in living conditions by cannery operators and management, regular inspections of the premises by sanitary inspectors, and a programme of medical care through the Indian Health Services. Progress was evident during the recent canning season, and it is planned that further progress will be developed for future canning seasons, so that the problem will become less intense in the future. In all of this, the role of the native employee loomed large and it is evident that the efforts of the official groups are dependent upon the co-operation of the native employee, who must pursue a changing course in the interests of his own, and his neighbour's, health.

COMMUNITY HEALTH CENTRES

Consistent progress in the construction of new community health centres to accommodate local health services, both official and voluntary, can be recorded, originating from the plan introduced five years ago toward shared financing of the construction. This past year has seen five more community health centres attain completion to bring the total to twenty-two community health centres now in operation under this plan. With three others under construction, nine in the planning stage, and two in which additions are being contemplated, it becomes evident that the accommodation for local health services throughout the Province is becoming considerably improved over the poor makeshift rented premises formerly pertaining as office accommodation.

The plan operates on the premise of a one-third financial sharing by National, Provincial, and municipal Governments toward construction of a specially designed community health centre. In so far as the municipal share is concerned, contributions by local service clubs or voluntary health organizations or by public subscription have been accepted, and often the local municipal sponsorship of the building is undertaken by a voluntary service club. In a considerable number of instances, the British Columbia Tuberculosis Society contributed from funds raised through Christmas seal campaigns, recognizing the part that Local Health Services contribute to the broad programme of tuberculosis control, while at the same time acknowledging the contributions that have been made over the years to that fund by these local communities. In much the same way, contributions from the Canadian Cancer Society, British Columbia Division, have assisted in the financing of the building, as well as rental contributions from the British Columbia Branch of the Canadian Red Cross Society.

In return for the financial assistance provided to the construction of these community health centres, the voluntary health agencies are provided with space in which to conduct their activities, including board rooms for their meetings and storage space for their supplies and materials. Thus, the building becomes truly a community health centre, accommodating both the official health department personnel and the voluntary health agencies, thereby co-ordinating all the community health services in one centre.

In conjunction with this movement toward improved accommodation for community health services, due recognition must be accorded the very considerable assistance stemming from the financial contributions of the National health grants. The support engen-

dered by their participation in the planned shared financing did much to originate the scheme, while its continuation over the years has spelled increasing success as the move toward improved health-unit quarters becomes adopted by more and more communities.

Two of the health centres constructed during this past year were in the Metropolitan Health Service area serving Greater Vancouver. The first of these was designed and built in conjunction with the modern municipal building for the Municipality of Burnaby, which unites all the municipal services in a combined administrative unit. The space allocated to health department purposes entailed an expenditure of $99,953, of which the National health grants contributed $15,000, matched by an equivalent amount Provincially. The second, built at a cost of $80,485, was erected in North Vancouver to provide administrative headquarters for the staff of the North Shore Health Unit. This building was officially opened by the Federal Minister of Fisheries during the early summer. During the opening ceremonies, the Deputy Minister of Health for the Province, who served as the first Medical Director of that Health Unit, reviewed some of the highlights of the early struggles of the service which laid the groundwork for the present progressive community approach. The Health Unit has kept pace with the growth of the communities and school districts it serves, to exemplify the value of unification in local health administration.

During the summer, also, the Deputy Minister of Health officiated at the opening of the Lillooet sub-office in the South Central Health Unit. Construction of this modern office and clinic space was undertaken by the Board of School Trustees for School District No. 29, who included the space as a unit of the newly constructed School Board offices. Financial arrangements, in addition to the National and Provincial sharing, included some contributions from voluntary health agencies.

The City of Prince George became interested in a community health centre for their health department purposes in 1955, when it became evident the School Board was in need of the space being rented to the Health Unit as headquarters offices. Plans were speedily completed, but the earlier-than-usual winter prevented construction completion until this past summer. The building, constructed at a cost of $58,155, became occupied soon after completion, with an official opening during September by the Chairman of the local Board of Health, Mrs. E. Gray. There was a very fine spirit of community co-operation in financing the project, as many associations and groups contributed funds and materials to assist with the local share of the cost. It has resulted in a two-story building, the first of its kind in design, providing for present official and voluntary health agency needs, while offering opportunities for future accommodation in keeping with the anticipated demands for service from a rapidly growing community.

The last of the community health centres to become completed during this past year was the headquarters of the North Fraser Health Unit at Mission City, which was constructed at a cost of $31,411 through the sponsorship of the Rotary Club there. It has resulted in an exceptionally well-designed, well-constructed, and well-appointed health-unit centre, in which space is sufficient to meet the needs of the community health agencies, both official and voluntary. It represents co-ordination of all community health services in a unified approach to the health needs of the community and district. Financing was a joint arrangement with contributions from National health grants, Provincial health grants, district municipal grants, Village of Mission City grants, Tuberculosis Society grants, Cancer Society grants, Red Cross Society grants, and Rotary Club grants. The Minister of Health and Welfare, who officiated at the opening ceremonies, took the opportunity to emphasize the value of the unified approach in the conduct of community health services and complimented the area for their forward outlook in that regard. The first public health nurse appointed to Mission City and District, Miss M. Grierson, was signally honoured at the opening ceremonies, establishing a link with the past and the present in due recognition of the major contribution of the resident public health nurse,

who pioneered the way in community health with the commencement of functions as a school nurse.

Interestingly enough, two community health centres constructed under this programme are already beginning to find that additional space is desirable, and negotiations are under way toward construction of additions to the original buildings. The headquarters of the South Okanagan Health Unit at Kelowna, which was constructed in 1952, find that additional quarters are needed for the voluntary health agencies. Discussions are under way between the community and the voluntary health agencies to see if an addition could not be made to the original building to provide the much-required space. The other is the sub-office of the North Fraser Health Unit at Haney, where the Maple Ridge Community Health Centre was constructed in 1953 under the sponsorship of the Maple Ridge Lions Club. In this particular building, increased staff needed to meet the increased growth of the community, require more office and clinic accommodation. Plans are therefore being considered for additional construction to that building.

At the moment, construction is under way toward the provision of community health centres in the Municipality of Richmond, the City of Penticton, and the City of Rossland. Hopes are held for their completion in the early spring of 1957. In addition, planning is going forward for construction of community health centres at Kitimat, Burns Lake, Vanderhoof, Salmon Arm, Trail, Cloverdale, Langley Prairie, Ladysmith, and Qualicum Beach. From all of this can be gathered the considerable amount of community interest that has become centred in construction of these centres. The construction of one serves as a concrete example of accomplishment in a community, thereby creating a desire for similar health department buildings in other communities; thus, the project grows as the years go by, indicative of the fact that the plan of financed sharing should be continued into the future.

Health units in certain other parts of the Province obtained new office accommodation during the year through other means. The headquarters of the East Kootenay Health Unit at Cranbrook, which had been exceedingly poorly housed, were able to move into new space provided in the newly constructed Court-house there. This serves to meet their needs for some time to come and provides them with up-to-date modern quarters to carry on the community health services for that large district. The Saanich and South Vancouver Island Health Unit, which has grown apace with the rapidly increasing population in the lower Vancouver Island area, has had to move four times in the past eight years in order to accommodate the increasing staff. Another move during this past year provided much more spacious accommodation for their needs, although, regrettably, the accommodation had to be located outside the municipality for which the major service is provided. This arrangement was provided on a rental basis; a community health centre would be a much happier approach to the housing needs of that local health department.

RESIDENT PHYSICIAN GRANTS

Numerous small communities, often in remote areas, are unable to obtain medical care because of their inability to attract a local resident physician, since there would hardly be a sufficient volume of therapeutic need to maintain his professional interest, or provide sufficient remuneration for a livelihood. In order to assist in the provision of medical care to these communities, a programme of grant-in-aid to resident physicians has been operative for some years through the Department of the Provincial Secretary, but for the past three years through the Health Branch, Department of Health and Welfare. It is designed to encourage physicians to take up residence in remote communities and to provide service on a periodic schedule of visits to neighbouring communities which are not sufficiently large enough in themselves to support a physician. The amount of the grant is based upon a definite formula of grants on a sliding scale, inversely proportionate to the population density, and directly proportionate to distances to be

travelled. The grant in itself, therefore, is not large, merely serving to reimburse the physician to some extent for the out-of-pocket expenses incurred in providing the necessary medical supervision of the community's sick. The community itself is expected to assume some responsibility to ensure that necessary office space and facilities are provided to the physician to meet his needs. The physician is expected to present a report on a quarterly basis to the Health Branch, Department of Health and Welfare, outlining the services provided for which a quarterly proportion of the grant is paid. During the year, grants were continued to twenty-one physicians in the administration of medical care to thirty communities.

An increase in the grant paid to a physician at Sooke was negotiated to permit him to provide more frequent periodic visits to the small communities along the extreme south-western tip of Vancouver Island. With the aid of this grant the physician has been enabled to carry on a medical-care programme for those residents, the grant assuming the major share of the travel expense involved in travel from Sooke to the communities concerned.

A problem requiring considerable attention during the year was the provision of some type of medical care to Telegraph Creek. Over the past year and a half it has been possible for the Health Branch to maintain some degree of medical care through the placement of a resident nurse in Telegraph Creek, who was able to give immediate attention to sick and injured patients, and by radio-telephone to consult with physicians at Whitehorse in respect to more advanced treatments, while screening the patients that might require evacuation to a medical centre such as Whitehorse. This plan served to supply the best answer to handling the medical care needs of that community, which is composed of a mixed native and white population. The nurse, however, submitted her resignation as of January, 1956, and negotiations had to be conducted toward locating a replacement. This did not prove to be too easy; a well-qualified nurse with experience in such a type of service was located for the summer months, but her family responsibilities would not permit her to accept the appointment on a long-term basis. Consequently, service was re-established during July, August, and September, only to come to a halt again thereafter. All efforts since then have failed to locate a replacement. Negotiations have to be undertaken in conjunction with the Indian Health Services, who have assumed 50 per cent of the cost of the service, but lately, because of the greater proportion of Indian population, have agreed to accept a larger share, up to 75 per cent of the cost of the service. As the year ended, all available efforts were being devoted to location of a nurse who might be interested in assuming the appointment. It must be recognized that these remote, inaccessible locations do not appeal to a great many people, and that it takes a professional graduate with a missionary outlook to become interested in such service. For that reason, investigations were being directed toward some of the Missionary Boards to determine if they had nurses who might take up the position.

Another northern location that required some special attention was in the community of Atlin. Here, fortunately, the British Columbia Branch of the Canadian Red Cross Society serves to fill a need by the introduction of a Red Cross Outpost Hospital, manned by a resident nurse. Government assistance in this matter was rendered in the provision of a building moved to a suitable site by the Department of Public Works. The resident nurse is assisted in her provision of medical care by regular monthly visits by three physicians, on a rotating basis, from Whitehorse. This supplies a degree of medical care to that community, not otherwise obtainable.

HOME-CARE PROGRAMMES

The initial success that attended the home nursing-care programme over the past four years has led to an active demand from other municipalities for inclusion of such services in their public health programme and, consequently, plans have to be negotiated

toward extension of the service. The matter of obtaining sufficient nursing staff hindered more rapid progress. It has been found that a home nursing programme effects an economic saving to the community in terms of hospital usage, while providing the patient and the family with much-needed help. In addition to the nursing care, it is found that provision of a housekeeping service is also of distinct advantage in provision of home help, and in most cases, this has been introduced in co-ordination with the home nursing programme. Patients are referred to the home-care service only upon the approval of the attending physician. It was evident from studies conducted in the past that the success of the service is dependent upon a co-operative interest on the part of physicians and hospital nurses, and that the whole service provides for a community health programme in which the hospital, practising physician, and the local health services are intimately associated in a united endeavour.

The earliest programme was in the nature of a special study which was introduced under the stewardship of the North Okanagan Health Unit in conjunction with the Vernon Jubilee Hospital, and was designed primarily to determine if home care for convalescent patients discharged from hospital early, might thereby release hospital beds for more acute cases. It was proven early that the programme effected the desired results in release of hospital beds for more acute patients, and thereby saved the community the need for construction of facilities to provide additional hospital beds. In its early phases this service was confined entirely to the City of Vernon, but, as experience was garnered from the service, it was determined that it could be extended to Vernon and District, provided additional public health nursing staff could be obtained. Consequently, in 1955, this extension was undertaken as additional staff became available. The programme was established under the financing advanced by National health grants and, as a pilot study under a National grant project, it occasioned considerable interest by the staff devoted to research into National health studies, as well as senior officials within the Provincial Health Branch. Statistical figures presented over the past four years have served to emphasize the results obtainable; during this past year the preparation of the statistical material was undertaken by the Division of Vital Statistics to establish comparative tables which would be of benefit in supplying information, not only on the Vernon home-care programme, but on other programmes, since introduced. From these tables comparative analysis can be made in development of additional programmes for the other communities seeking this service, so that some prediction of the results that may be anticipated can be forecast for discussions with Union Boards of Health involved.

VERNON HOME-CARE PROGRAMME

	January to September		
	1954	1955	1956
Number of patients—			
On nursing care only	66	88	73
On housekeeping service only	19	25	36
On both nursing and housekeeping service	8	33	17
Total receiving service	93	146	130
Number nursing visits	482	365	469
Average per patient	5.7	3.2	4.9
Number housekeeping visits	282	402	442
Average per patient	10.5	6.9	7.7
Hospital-days saved—			
By nursing visits	969	901	876
By housekeeping services	270	234	319
By both	129	343	194
Total days saved	1,368	1,478	1,389
Hospital-days saved per patient—			
Receiving nursing care only	14.6	10.2	12.0
Receiving housekeeper service only	14.2	7.0	8.8
Receiving nursing care and housekeeper service	16.1	13.1	10.8
Average per patient	14.7	10.9	10.6
Time of public health nurses—			
Travel ..... min.	4,016	3,678	4,815
Service ..... ,,	5,929	5,455	9,093
Totals	9,945	9,133	13,908
Average public health nurse time per visit—			
Travel ..... min.	8.3	10.08	10.27
Service ..... ,,	12.3	14.94	19.39
Totals	20.6	25.02	29.65
Average public health nurse time per patient—			
Travel ..... min.	54.2	30.2	53.5
Service ..... ,,	80.1	44.8	101.0
Totals	134.3	75.0	154.5
Housekeeper hours, totals	1,357.75	2,414.50	2,615.75
Average housekeeper hours per visit	4.88	6.01	5.92
Average housekeeper hours per patient	50.28	41.62	45.89

Costs

Total cost	$2,626.56	$3,010.05	$3,511.67
Hospital-days saved	1,368	1,478	1,389
Cost per day	$1.92	$2.04	$2.53
Standard hospital *per diem*	$11.35	$12.05	.....

A study of the statistics shows that there was a slight decrease in the number of patients referred to the home-care programme during 1956, as compared to 1955, but a significantly greater number than 1954 when the plan was still in its formative stage. However, this lesser number of patients required a greater amount of service and the time taken up in nursing care per visit was significantly increased to 29.65 minutes during 1956, as compared to 25.02 minutes in 1955, and 20.6 minutes in 1954. The travel involved in making these visits remained constant at about 10 minutes per visit, and the major portion of the increased nursing time per visit was involved in actual service to the patient.

This amount of service has shown a gradual increase over the past three years from 12.03 minutes in 1954, to 14.94 minutes in 1955, and 19.39 minutes in 1956. Experience indicates further that the amount of nursing care per patient which decreased from 134 minutes in 1954 to 75 minutes in 1955 has doubled in 1956 to 154 minutes. This seems to be due to the fact that patients with a more prolonged illness are being referred to the service and, therefore, require a greater proportion of nursing care than heretofore.

On the other hand, the amount of housekeeping service per visit and per patient has remained fairly constant during 1956, as compared to 1955, involving between 40 and 45 hours per patient, requiring 7.7 visits per patient, of approximately six hours per visit.

As there were a lesser number of patients receiving care, there has been a corresponding decrease in the number of hospital-days saved in 1956, as compared to 1955, but the hospital-days saved per patient has remained fairly constant at approximately ten days per patient, during the past two years. This provides to the community use about five beds per annum, the figures being 5.0 for 1954, 5.2 for 1955, and 5.0 for 1956.

The costs, as might be anticipated, have shown a gradual continuing upward trend over the past three years, rising from $1.92 *per diem* in 1954 to $2.53 in 1956. This must be related to the fact that the standard hospital *per diem* cost has shown a similar trend over those years, rising from $11.35 *per diem* to $12.05 *per diem*. Thus, it is evident that in proportion, the community benefits financially in provision of nursing care through a home-care programme operated in co-operation with the community general hospital.

A home-care programme commenced to supply service to Saanich in 1955, to patients referred to it by private physicians, and was not particularly directly related to convalescent nursing care of the discharged hospital patients. As it has now been in operation for one full year, it is possible to compile statistics in relation to the experience obtained in supplying that service. In addition, home-care programmes of a similar nature were introduced in the Upper Island Health Unit in the Municipalities of Courtenay, Comox, and Cumberland on Vancouver Island and in Powell River on the mainland. These have now been in operation long enough to obtain statistical information over a six-months' period, and to compare the average figures with that of Saanich. It is also further possible to compare some of the information with the experience obtained from the Vernon Home-care Programme and to note somewhat similar trends in the number of nursing visits required per patient, the average nursing-care time per visit, and the average nursing-care time per patient. A table exhibiting the comparative data is as follows:—

COURTENAY, POWELL RIVER, AND SAANICH HOME-CARE PROGRAMME

	Courtenay (Six Months)	Powell River (Six Months)	Saanich (Twelve Months)
Number of patients	25	18	973
Number of nursing visits	206	80	3,957
Average number visits per patient	8.2	4.4	4.07
Hospital discharges to home care	2	4	35
Time of public health nurses—			
Travel ..... min.	2,450	523	33,634
Service ..... ,,	6,285	1,780	103,711
Totals	8,735	2,303	137,345
Average public health nurse time per visit—			
Travel ..... min.	11.9	6.5	8.5
Service ..... ,,	30.5	22.3	26.2
Totals	42.4	28.8	34.7
Average public health nurse time per patient—			
Travel ..... min.	98.0	29.0	34.5
Service ..... ,,	251.0	98.8	106.5
Totals	349.0	127.8	141.0
Mileage travelled	818.7	175.7	9,632.7
Miles per patient	32.7	9.7	9.9

It is evident that there is some difference in the amount of service per patient supplied in Courtenay, as compared to that supplied in Powell River and Saanich, since the average number of visits per patient is almost doubled in Courtenay. In addition, the average time per visit is somewhat greater and the amount of nursing care per patient is thereby greatly increased.

This would seem to denote that the patients referred to the service in Courtenay are more likely to be suffering from a prolonged illness, which is to be anticipated in the light of the request that the service be introduced to provide a measure of home care to elderly, ill persons who did not actually require hospitalization, but did require some nursing care.

The Courtenay programme is hampered by the fact that it is confined to the three organized communities of Courtenay, Comox, and Cumberland, which are separated by unorganized areas in which it was not possible to provide home-nursing care, because of administrative difficulty in financing. Consequently, the amount of travel required to provide the service becomes increased and this is reflected in the comparison of the travel item involving a distance of 32.7 miles per patient in Courtenay as compared to 9.7 miles per patient in Powell River, and 9.9 miles per patient for Saanich.

The trend toward home-care programmes is being felt in other health unit areas throughout the Province and certain investigations are going forward in local areas toward initiation of these services as part of the official public health nursing programme. Interest has been shown in communities in the North Fraser Health Unit, South Okanagan Health Unit, and the Boundary Health Unit. Progress toward introduction of a programme is necessarily slow since it involves a co-operative community approach in which a number of related groups must be co-ordinated in their features that the service will fulfil. In the meantime, information is being garnered from the existing programme to serve as a guide as to what can be anticipated from new programmes. An effective programme of home nursing and housekeeping care continues to operate to the advantage of the community in the City of Kelowna.

The Victorian Order of Nurses, who were originally pioneers in the field of home nursing-care service, continue in that field in a number of communities, particularly in the larger cities of Victoria and Vancouver, but also in Trail, Cloverdale, and Nanaimo. In each of these, there is a united action between the official public health agency and the Victorian Order of Nurses agency to provide an effective community health service without duplication or overlapping in essential services. While this is a desirable situation, there remains the fact that certain duplication must continue in respect to administration, travel, and home visiting, and questions must be raised as to whether both services in one community are desirable.

SCHOOL HEALTH SERVICES

School health services are designed to provide a medical and preventive health supervision of the school-child, in which attention is focused upon the mental, emotional, physical, nutritional, and immunization status of the school-child, and the sanitary aspects of the school plant. Changing concepts have influenced changes in the school health programme. The first was the realization that the school-child could not be segregated from the rest of the community, as he was actually a definite member of a family group within the community. It is, of course, evident that the health of the school-child is a direct reflection of the community health, since the school pupil spends a greater proportion of his daily life in the community, rather than a dweller within the school. Indeed, his experiences during his formative years as an infant and pre-school child may equip him mentally, emotionally, and physically to deal with his environment during his school-years to the degree that the school health service has only to provide continuity of that developmental optimum health.

Coincidentally, evidence was multiplying indicative of the need to provide concentrated service for certain individual children, while providing routine service for the pupils as a whole. " The Manual of School Health Practices," Department of Health, City of New York, has very ably summarized this, as follows:—

" Behind us are the days of emphasizing great numbers of routine inspections and examinations which supposedly gave the administrator a cross-section of the health status of the whole school population, but which, without doubt, revealed little about the well-being or progress about the individual child. To-day the individual child and his specific needs are of chief concern.

" Behind us are many outmoded methods of controlling communicable disease, but ahead of us are such unsolved problems as the prevention of rheumatic fever and dental caries, problems that must remain unsolved until medical science reveals their causes.

" Behind us also are over-specialized, independent, unco-ordinated efforts in caring for such problems as defective vision and hearing and emotional disorders. Before us is the need to fit these activities into proper relationship through a comprehensive, over-all administrative programme, so planned as to conserve our resources and, at the same time, serve the individual in the best possible manner.

" Discarded is the concept that school-children owe their favourable health status solely to medical examinations, and administrations of school-teachers and nurses. To-day we see so much more clearly than we did a generation ago that the prenatal instruction given to mothers, better professional attention at birth, training in infant nutrition and care, early immunizations, improvements in housing, advances in sanitary conditions and neighbourhoods, protection of milk and other foods, introduction of playgrounds, planned community attacks on tuberculosis and other communicable diseases—all can make their contributions. We have learned that without the co-operative functioning of each of these services to-day's children cannot achieve well-being."

Thus, improved community health services are reflected in the health of the school-child. The school health programme, as it is developing, has several objectives:—

(1) It is designed to present an appraisal of the child, physical, mental, emotional, and social. What are his assets, his liabilities? What needs to be done to help this child achieve a level of health commensurate with his potentialities for health?

(2) How can each child in school be considered as an individual? Unless a way is found to accomplish this end, the knowledge of the principle of the individual difference is of no avail.

(3) How can the school environment be improved so that the growth and development of the child will not be impeded? The concern here lies with both the sanitation and the emotional environment; that is to say, the emotional environment of the classroom, including such factors as the effect of the teacher's personality, the routines and disciplines imposed on the children.

(4) How could an educational programme be developed in a school which enables a child to learn how to make judgments which affect health behaviour?

These, then, are the main considerations in the school health programme—health service, health guidance, health instruction, and school environment. In order to accomplish this, education and school health personnel are required to reorient their efforts so that consideration is given to the needs of the child in developing a programme that meets the mental, emotional, social, and physical needs of this age-group.

In this, the classroom teacher and the public health nurse predominate in the programme, since close collaboration between them can materially aid the school-child who is in the greatest need of professional attention. The teacher-nurse conference may pro-

vide, therefore, sufficient information leading to satisfactory treatment, but in other instances the support of the parents, family physician, and others will be required. The public health nurse serves to link up the school with the health and welfare of the community.

Toward this end, the Health Officers' Council has devoted considerable attention toward a revision of the school health programme over the past two years. Details in respect to these revisions elaborating upon the reasons for, and recommendations for revision, are contained in the last two Annual Reports. During the past year attention has been focused on the new system of categorization of the physical, emotional, and mental status of the individual school-child. Thus, the new categorization utilizing "P," "E," and "M" as symbols to indicate physical defects, emotional problems, and mental defects, respectively, was introduced with a numerical designation from 1 to 4 to indicate the magnitude of the respective defect. Reactions from the school medical inspectors engaged in this new classification have been somewhat mixed, with a certain amount of complaint that it is difficult to assess the mental status of the school-child upon the basis of a short examination. Proponents of the plan argue, however, that the assessment of the mental status of the child should be determined from the teacher-nurse and parent-nurse relationship, and that the school medical inspector should be guided in his assessment by the public health nurse serving that particular school. It may be too early to determine the practicability of the new categorization system since it has only been in effect for one academic year, further use of the system seems desirable in order that the experience with it may determine its value.

The effect of school environment upon the well-being of the school occupants requires that the sanitary inspectors throughout the Province provide at least an annual inspection of the school plant. The growth in school population had created a need for additional school plants which are being constructed in all areas of the Province. Two years ago, the Department of Education brought out a "School Building Manual" in which certain recommended standards of plant construction were detailed. Since then, there has arisen a need for revision of that Manual, and certain consultations have been held toward modification of the sanitation features of the Manual.

Some attention has also been focused on the matter of first-aid instruction in schools, originating from a couple of inquiries. The first of these came from the Public Health Committee of the Canadian Medical Association who expressed interest in the subject of artificial resuscitation, feeling that if more people were trained in the principles, there would be less likelihood to depend upon mechanical resuscitators and the attendant delay in awaiting the arrival of that mechanical equipment. It was argued, then, that probably more deaths from gas poisoning and drowning could be prevented if more people were trained in artificial resuscitation. The second approach was from Civil Defence authorities who expressed interest in training of a greater number of persons in the basic principles of first aid from the point of view of aid in natural disaster. Authorities from the Department of Education indicated their personal reaction was favourable toward pupils becoming qualified in first aid, but stated it had to be a definite and purposeful continuing policy in which teachers qualified in the subject would undertake to include that subject in the school curriculum. It was evident that further discussions should be entered into by the Health Branch and the Department of Education toward development of a definite policy, from an education and health viewpoint. Other discussions centred upon the role that the teacher may play in undertaking certain routine parts of the physical examination of the school-child, notably in respect to height and weight determination, and possibly in screening of visual acuity. Further exploration of this proposal is to be made to determine whether the teacher can participate in that capacity, utilizing the experience as a teaching medium.

Investigations into height-weight relationship in the development of the school-child have continued through the use of the Wetzel Grid in the school health programme in the Central Vancouver Island Health Unit. At the same time, research has been going forward under the direction of the Director of that health unit into the possibilities of development of a Provincial chart to supply information on the height-weight relationships in a graph form. The head of the Department of Pediatrics in the Faculty of Medicine at the University has been interested in this development and has provided consultative advice on the subject; at the same time, the Division of Vital Statistics, through its Director, has co-operated in the study in analysing charts and graphs submitted, and in obtaining breakdowns of the figures obtained on British Columbia residents during the National height-weight survey conducted by the Division of Nutrition within the Department of National Health and Welfare two years ago. From this study it is hoped something tangible may develop which can be mutually utilized throughout local health services in the Province.

Various other sections of this Annual Report deal with services which are intimately related to the school health programme, or are directly participating in it. These will be found especially in the sections dealing with public health nursing services, dental health services, nutrition services, sanitation services, and health education. In a total assessment, therefore, of the school health programme, these services must be given due consideration.

THE HEALTH OF THE SCHOOL CHILD

Over recent years an endeavour has been made on the basis of the school health programme to analyse in general terms the health of the school-child. As a basis of analysis, the statistics on physical examinations, immunization status, and disease incidence have been utilized, comparing the result with that obtainable over a five-year period. This year, however, a comparison with previous years, at least in so far as physical examinations are concerned, is not possible because of the changed classification brought about in the revision of the school health programme. Certain conclusions remain, however, which do reflect some concept of the general health of the school-child.

For the academic year, September, 1955, to June, 1956, the school health programme was operative in the eighty-two large school districts and the various smaller school areas. The continuing increase in the school enrolment resulted in a far greater number of pupils in the grades examined, there being 230,433, as compared to 215,945 a year ago. Of this number, only 44,211 (19.2 per cent) received medical examinations, a further decrease in the percentage examined. This may not be as serious as it appears since the emphasis in the school health programme has become directed to examinations of preferred groups and referred pupils rather than routine examination of all pupils. An examination of Table I would confirm that a very large proportion (81.3 per cent) of the pupils enrolled in Grade I received a physical examination, the majority of them just prior to entering school. The results shown, by grade, in Table III, indicate further that a considerable number of pupils become examined in Grade IX (33.6 per cent), just as they are transferring to high-school studies.

It is apparent from the statistical tables, particularly Table I and Table III, that the great majority of the pupils examined exhibited no defects, or only minor, physical, emotional, or mental defects. Somewhat less than 20 per cent showed any physical defects, while emotional and mental problems accounted for 4 per cent and 2 per cent, respectively. The special attention that is given to referred pupils is reflected somewhat in the statistics as is evidenced in Table III in comparison between the results in Grade I and Grade II. In Grade I, the effort is made to provide a physical examination of as many pupils as possible, in an approach to ensure that the pupil is in ideal health upon entering school at a time when he must readjust to a new phase of life. That programme reveals over three-quarters of the pupils to be in fit condition. In contrast, in Grade II,

examinations are concentrated on pupils referred by teachers, public health nurses, and parents, which pupils are felt to be suffering from some condition inimical to health. It would be logical, therefore, to anticipate that a larger proportion of these examinees would show graded defects; this is evident in Table III as 26.4 per cent have physical defects, 4.7 per cent emotional defects, and 2.2 per cent mental defects.

Attention was directed in the last Annual Report to the unfortunate trend toward a lesser number of school personnel being X-rayed than in former years. Table IV revealed an encouraging change as a greater number were done, 52.7 per cent, compared to 42.9 per cent the previous year. While this is encouraging, there remains a need for further intensification of that programme, since it is desirable that the great majority of the school personnel be adequately checked by X-ray examination.

It is gratifying to report that the immunization status of the school-child, as evidenced in Table V, is being maintained at a high level, and as a matter of fact is showing improvement over the situation in recent years, as a higher proportion of the enrolled pupils are now protected against such diseases as smallpox, diphtheria, and tetanus. As was indicated in past Reports, the use of combined antigens was promoting an increase in the number of children protected against tetanus, and it is astounding to observe the change that has occurred; during this past year, 63.6 per cent of all grades exhibit immunization to tetanus, as compared with 44.9 per cent the previous year, and 29.4 per cent the year before that. This is a desirable situation, since sporadic cases of tetanus continue to occur through the Province, three such cases having been recorded during the past year for a rate of 0.2 per 100,000 population.

Complacency should not, however, be allowed to develop in respect to the immunization status of the school-children, since actually the percentage immunized should approach totality as nearly as possible. Examination of the tables revealed that children enrolled in the higher grades are less adequately protected from this point of view, and probably intensification of the programme amongst that school-group is justified, so that they graduate from high school into the community as fully protected as possible.

As has been indicated in previous Reports, the percentage of school population immunized against typhoid fever remains significantly low, and is becoming decreasingly so with each passing year. While there is an increased incidence of typhoid fever, particularly during this last year, this has been occurring in certain population groups in which sanitation has been extremely poor; the incidence is further isolated to certain localities and there does not seem to be a need for general over-all immunization against this infection. Consequently, the programme of typhoid-paratyphoid immunization has been lessening as is evident in the numbers of school-children maintaining such immunity status.

A new phase of immunization status not revealed in Table V is in relation to poliomyelitis immunization. Actually, some 166,000 school-children from ages 5 to 15, enrolled in Grades I to IX, were given the initial injection of this vaccine prior to June, 1956. This was in addition to the 45,067 children who received a complete series of injections during 1955. As vaccine becomes available, administration of poliomyelitis vaccine is to be increased to provide the same degree of protection to all children for whom parental consent becomes authorized.

The communicable-disease incidence among school-age children is shown in Table VI, indicating that the so-called childhood infections, such as chicken-pox, measles, mumps, and rubella, continue to reap their toll. Rubella increased sharply during the year, following on a very low incidence over the past two years; this infection tends to display an aptitude for reoccurrences as the non-immune population increases in size. Mumps also displayed a much higher attack rate, almost doubling the number of cases involved over the past two years. The number of cases of chicken-pox was increased over that prevalent the previous year, but was not in undue proportion to that existing

in the years beyond 1955. A very definite decrease occurred in respect to measles, which had the lowest incidence of the past five years, being only half as great as the incidence during the immediate past year. Influenza, which had shown an extremely heavy attack rate in 1955, was significantly lower in 1956, but still considerably greater than in the years preceding 1955. It remained a mild type of infection and did not create any particular complications, so that no particular lasting effects from the disease were experienced. Poliomyelitis was considerably lower in its attack rate and the incidence among school-children is a mirror of the community incidence in the lesser number of cases involved. A similar type of statement may be applied to bacillary dysentery of the Shigella variety, since an increase in the community incidence there is also reflected in the number of cases involving school-children. Streptococcal infections, scarlet fever, and septic sore throat were recorded in a lesser number of cases; significance is attached to it, however, because of its relationship to rheumatic fever incidence and some attention is being focused in that direction to determine if prophylactic measures, utilizing antibiotic drugs, is justified. A certain measure of gratification can be obtained from the indication that no cases of diphtheria or tetanus occurred among the school-age population in which the increased immunization levels have been seen.

DISEASE MORBIDITY AND STATISTICS

Material derived from the information collected through the Canadian Sickness Survey, 1950–1951, continues to be prepared. The survey was carried out over a twelve-month period, under grants made available through the National health grants programme and collected information on the amount and types of sickness for the nation as a whole, in a project administered in each of the ten Provinces by the Provincial health departments, in co-operation with the Department of National Health and Welfare. Further reports analysing the data are anticipated as the material becomes reviewed.

The notifiable diseases during 1956 are shown in Table VII in which comparison is made with that reported over the previous four years. The rate of 3,444.6 per 100,000 population for 1956 approximates the rate of 3,462.0 per 100,000 population for 1955, which was the highest incidence recorded to date. The statistics show a decrease in the incidence of epidemic influenza from a rate of 1,195.4 for 1955 to 297.8 for 1956, but this is offset by an increase in chicken-pox (526.9 for 1956 as compared to 379.0 for 1955), mumps (501.3 for 1956 as related to 223.9 for 1955), and rubella (836.8 for 1956 compared to 58.9 for 1955). Actually, the Report of a year ago predicted the likelihood of a slightly upward trend in rubella, since the incidence had been falling to a very low level over the past four years and it could be suspected that a high proportion of non-immune susceptibles was developed in the population.

While some decrease in the amount of epidemic hepatitis took place with a rate of 25.4, nevertheless this infection continued to display epidemic seriousness in certain communities. The distribution of immune serum globulin as a prophylactic for this infection has been continued. During the year, the Health Officers' Council Sub-committee on Communicable-disease Control gave consideration to increasing the criteria for utilization of immune serum globulin, and thereafter greater amounts were used. The actual effect on the incidence of epidemic hepatitis is, however, not too clear.

Bacillary dysentery of the Shigella type has continued to exhibit a fairly high attack rate at 26.6 per 100,000 population, slightly up over the 22.5 rate of 1955, but lower than the 47.8 rate for both 1954 and 1953. It is likely that this situation will continue for some years to come, since the infection is not indigenous to the Province as a whole, and local outbreaks can be anticipated from time to time, arising from carriers.

An exceedingly bright spot in the notifiable-disease picture was the extremely decreased incidence of diphtheria, only one case being reported during 1956. Adequate protection against this infection can be obtained through immunization, and emphasis on

the increased immunization of young adult populations would probably yield a complete absence of the disease from British Columbia.

Salmonellosis showed a very definite upward trend in 1956, particularly *salmonella typhi* with a rate of 2.4 as compared to a rate of less than 1.0 for the last three years, and also Salmonella of various other types, unqualified, in so far as the report is concerned, showed an increase to 13.9 as compared to a rate of 7.0 a year ago. *Salmonella paratyphi* exhibited a very slight decrease to a rate of 2.4 as compared to a rate of 3.1 the previous year. The amount of typhoid and paratyphoid fever prevalent in the Province had occasioned some study, particularly by the staff of the Skeena Health Unit in which there seemed to be a fairly high prevalence of the disease among native and related population working in the fish canneries along the Skeena River. There was some suggestion that improvement in the housing conditions and the sanitation facilities for this group seemed to be indicated if any inroads were to be made in controlling the spread of infection, while at the same time concentration on typhoid-paratyphoid immunization clinics for those groups seemed desirable. There were a couple of meetings convened between representatives of the cannery management, cannery operators, Indian Health Services, Provincial Health Services and local health services, at which the subject was fully reviewed and consideration given to the steps that might be taken toward control of the infection. It was evident that it was going to require co-operative action on the part of all groups and steps were taken toward that end. Indian Health Services undertook to provide medical supervision of the native population, cannery management and operators undertook to improve housing and sanitation facilities, and the local health services undertook to organize immunization clinics. As a result of this concerted attack, it is hoped that the amount of infection occurring during the cannery operating seasons can be materially decreased.

A couple of outbreaks of typhoid fever also arose among Mennonite population, who had recently immigrated to Canada from Mexico to escape the heavy Mexican tax laws. The first outbreak occurred in June, when four children were found to have positive cultures in families within the Boundary Health Unit. This was followed by an outbreak in September among Mennonite families resident at Burns Lake in the Cariboo Health Unit, where sixteen cases were located over a ten-week period from the infection spreading from family to family. It was evident from both of these incidents that personal hygiene and household sanitation were factors in the spread of the infection, while the causative factor seemed to be carriers emigrating into Canada, where the disease is endemic. Discussions were immediately undertaken with officials of the Department of National Health and Welfare to determine if some control over immigrating Mennonites could be instituted, and an arrangement was worked out by them with the Department of Immigration to provide information on date of entry and destination of all future immigrating Mennonites.

Infections due to streptococcal organisms showed a downward trend during 1956, particularly in the incidence of scarlet fever and septic sore throat. This is a situation that has been developed over the past five years as the rates decreased each year to a new low of 47.8 for scarlet fever and 12.7 for septic sore throat. This is encouraging, since even although the newer methods of treatment with chemotherapeutic or antibiotic drugs have decreased the seriousness of these conditions, there does remain the possibility of developing rheumatic fever from streptococcal infections. The Health Officers' Council has given some attention to the amount of rheumatic fever that may now be existing throughout the Province, feeling that some measures of prevention of recurrence of attacks is justified in the hope of curtailing cardiac complications. A pilot study was established in the South Okanagan Health Unit a year ago, and a certain measure of progress has been forthcoming on a rather gradual basis. The study was reported upon during meetings of the Health Officers' Council throughout the year, and suggestions were advanced for a further step in the study, since other health units are desirous of tackling

the problem on the basis of the approach made by the South Okanagan Health Unit. There are certain guides already available, since this matter of prevention of rheumatic fever had been investigated in certain areas of the Province of Saskatchewan, from which reports indicated the procedure that may be introduced in a control programme.

Tetanus, which only occasionally revealed itself in the past years has, in recent years, exhibited a somewhat higher incidence. This warrants, therefore, some attention to tetanus immunization and it is encouraging that the use of the combined antigen is promoting an immune population among the pre-school and school-age groups. Infections for the most part have been confined to adults, indicating that immunization of adult populations is seemingly justified. Certainly, in the face of community disaster of any type, the problem of tetanus infection may be a serious consideration.

Tick paralysis, which has not shown itself for the past five years, occasioned one case during 1956. This is a condition that may be expected from time to time as the British Columbia forests during the spring months are heavily inundated with ticks, which can create tick paralysis through the toxins secreted by the burrowing tick. It remains a condition which must be borne in mind by the medical practitioner, since early and rapid removal of the tick prevents the condition arising, and overcomes the paralysis if done effectively, even after paralysis has set in.

The incidence of tuberculosis showed a trend downward, as does also the incidence of syphilis. On the other hand, the amount of gonorrhœa has increased. The problems in relation to these various infections are, however, presented in the reports of the Divisions dealing with those specialized conditions. Poliomyelitis has presented a marked decrease with a rate of 6.2 per 100,000, which is the lowest incidence since 1950. A similar trend has been occurring throughout Canada, and it is felt that it is only one of the peculiarities of this infection and not any reflection upon the fact that Salk poliomyelitis vaccine has become utilized. In the first place, the amount of vaccine administered has been exceedingly small and it could in no way influence the total Provincial incidence, particularly as the administration was confined to specific age-groups between 5 to 15 years of age. Difficulties in production prevented completion of a programme prior to the 1956 poliomyelitis season, so that it is questionable whether any of the 1956 vaccinees could be considered adequately immunized prior to the seasonal infection developing. Therefore it must be argued that the amount of immunity conferred among the general population remained significantly low and could hardly be a factor in the decrease that occurred in the incidence of the disease.

Administration of the vaccine during 1956 followed the pattern established during 1955, in which the staffs attached to local health services throughout the Province undertook to obtain parental consents and to administer the vaccine to all those for whom consent was obtained in Grades I to IX throughout the schools, and those likely to enter school in September, 1956. Vaccine deliveries hampered progress in the programme, so that it was not possible to administer the second injection as had been planned, before the closure of schools in June. Further delay during the summer and early fall led to a late recommencement of the programme, which did not get under way until October and has been continued on a prolonged basis throughout November and December into January. While some areas of the Province have completed the initial two injections, others are still awaiting vaccine for that purpose. Plans are now going forward for the 1957 campaign in which it is hoped to complete the third injection to the 1956 vaccinees and the re-enforcing dose to the 1955 vaccinees, before considering extension of the programme to the immunization of all children from age 1 to 16.

The control measures in poliomyelitis are evidence of a fine co-operative teamwork on the part of a number of groups, notably Connaught Medical Research Laboratories; Department of National Health and Welfare; British Columbia Foundation for Poliomyelitis; Western Society for Rehabilitation; Royal Canadian Air Force 121 Communi-

cations and Rescue Flight, Sea Island; the Provincial health service, and local health services. Through a combination of all these agencies, it is possible to provide immunization procedures, diagnostic services, consultative services, evacuation services, treatment services, and rehabilitation services, all of which play their part in prevention and treatment for poliomyelitis.

In spite of the decrease in the number of cases, there has been an increase in the case fatality rate to 3.6 for 1956. A comparison with the rates occurring in the previous years of peak incidence and recent years indicates, however, that this is a rather low fatality rate, in harmony with the experience of the past four years, during which the handling of poliomyelitis patients has been organized to a high degree of efficiency.

The statistical handling of notifiable diseases through the Division of Vital Statistics permits the preparation of tables and charts for analysis of the reportable-disease situation throughout the Province at any one moment. Statistical tables featuring the number of cases and case rates over the most recent five years, while listing the incidence by health unit throughout the year graphically represent British Columbia experience in disease incidence.

TABLE OF POLIOMYELITIS CASE FATALITY RATES, BRITISH COLUMBIA

Year	Cases	Deaths	Case Fatality Rate
1927	182	37	20.3
1928	102	19	18.6
1929	43	13	30.2
1930	34	8	23.5
1931	42	11	26.2
1947	313	12	3.8
1952	584	37	6.3
1953	787	26	3.3
1954	211	6	2.8
1955	224	3	1.3
1956	84	3	3.6

TABLE I.—SUMMARY OF HEALTH STATUS OF PUPILS EXAMINED, ACCORDING TO SCHOOL GRADES, 1955–56

Item	Total Pupils, All Schools	Examined in Grades			
		Grade I	Grades II–VI	Grades VII–IX	Grades X–XIII
Total pupils enrolled in grades examined	230,433	28,334	117,879	54,659	29,561
Total pupils examined	44,211	23,046	9,775	9,209	2,181
Percentage of enrolled pupils examined	19.2	81.3	8.3	16.8	7.4
Percentage of pupils examined with minor or no physical, emotional, or mental defects	76.6	76.8	73.4	81.9	65.2
Percentage of pupils examined having specified type and degree of defect—					
Physical 2	17.6	17.9	21.0	13.8	15.7
Emotional 2	3.8	4.0	4.0	3.0	3.4
Mental 2	1.3	1.3	2.0	0.8	0.3
Physical 3	1.2	1.3	1.5	1.1	0.2
Emotional 3	0.2	0.2	0.3	0.3	0.2
Mental 3	0.2	0.2	0.4	0.1	.....
Physical 4	0.1	0.1	0.1	0.2	0.1
Emotional 4	0.1[1]	0.1[1]	0.1[1]	0.1[1]	.....
Mental 4	0.1[1]	0.1	0.1[1]	.....	.....

[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, 1955–56

Total pupils enrolled in grades examined	85,128
Total pupils examined	30,177
Percentage of enrolled pupils examined	35.4
Percentage examined with minor or no physical, emotional, or mental defects	76.2
Percentage of pupils examined having specified type and degree of defect—	
Physical 2	18.5
Emotional 2	3.9
Mental 2	1.3
Physical 3	1.4
Emotional 3	0.2
Mental 3	0.2
Physical 4	0.1
Emotional 4	0.1[1]
Mental 4	0.1

[1] Less than 0.1 per cent.

TABLE III.—HEALTH STATUS BY INDIVIDUAL GRADES OF TOTAL SCHOOLS, 1955–56

Item	All Schools	Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI
Total pupils enrolled in grades examined	230,433	28,334	26,421	26,714	23,763	20,621	20,360
Total pupils examined	44,211	23,046	2,247	2,958	2,667	967	936
Percentages of enrolled pupils examined	19.2	81.3	8.5	11.1	11.2	4.7	4.6
Percentages examined with no physical, emotional, or mental defects	77.9	76.8	66.8	79.2	72.1	73.7	73.6
Percentage of pupils examined having specified type and degree of defect—							
Physical 2	17.6	17.9	24.5	17.3	22.8	19.9	20.8
Emotional 2	3.8	4.0	4.5	5.4	3.3	3.4	4.9
Mental 2	1.3	1.3	1.7	4.3	1.0	1.1	1.5
Physical 3	1.2	1.3	1.7	1.4	1.6	1.1	1.1
Emotional 3	0.2	0.2	0.2	0.4	0.4	0.1	0.5
Mental 3	0.2	0.2	0.4	0.8	0.2	0.1	0.3
Physical 4	0.1	0.1	0.2	0.1	0.1[1]	-----	0.3
Emotional 4	0.1[1]	0.1[1]	-----	0.1[1]	-----	-----	-----
Mental 4	0.1[1]	0.1[1]	0.1[1]	0.1[1]	-----	-----	-----

Item	Grade VII	Grade VIII	Grade IX	Grade X	Grade XI	Grade XII	Grade XIII
Total pupils enrolled in grades examined	20,384	18,308	15,967	12,647	9,116	6,998	800
Total pupils examined	3,055	796	5,358	1,409	435	307	30
Percentages of enrolled pupils examined	15.0	4.3	33.6	11.1	4.8	4.4	3.7
Percentages examined with no physical, emotional, or mental defects	78.2	72.4	85.4	68.3	58.6	61.9	50.0
Percentage of pupils examined having specified type and degree of defect—							
Physical 2	19.1	19.7	9.9	18.5	11.9	9.4	3.3
Emotional 2	3.3	4.4	2.6	4.0	1.4	3.0	6.7
Mental 2	1.3	1.4	0.4	0.5	-----	-----	-----
Physical 3	1.4	1.8	0.4	1.8	0.7	0.3	3.3
Emotional 3	0.5	0.4	0.1	0.1[1]	0.7	0.3	-----
Mental 3	0.2	0.1	-----	-----	-----	-----	-----
Physical 4	0.1	0.4	0.3	-----	0.5	-----	-----
Emotional 4	-----	0.1	0.1[1]	-----	-----	-----	-----
Mental 4	-----	-----	-----	-----	-----	-----	-----

[1] Less than 0.1 per cent.

TABLE IV.—NUMBER EMPLOYED AND X-RAYED AMONGST SCHOOL PERSONNEL, 1955–56

Item	Total	Organized	Unorganized
Number employed	6,492	4,626	1,866
Number X-rayed	3,423	2,967	456

TABLE V.—IMMUNIZATION STATUS OF TOTAL PUPILS ENROLLED, ACCORDING TO SCHOOL GRADE, 1955–56

Grade	Total Pupils Enrolled by Grades	Percentage Immunized			
		Smallpox	Diphtheria	Tetanus	Typhoid
Total, all grades	230,433	63.7	70.0	63.6	0.8
Grade I	28,334	70.0	79.8	85.9	0.7
Grade II	26,421	69.2	78.9	81.5	0.9
Grade III	26,714	67.6	75.7	72.1	1.1
Grade IV	23,763	64.1	70.7	64.5	1.0
Grade V	20,621	67.3	73.0	64.2	0.7
Grade VI	20,360	68.8	74.4	62.4	0.8
Grade VII	20,384	63.2	66.3	51.8	0.8
Grade VIII	18,308	56.9	62.0	48.7	0.4
Grade IX	15,967	50.3	53.1	41.3	0.5
Grade X	12,647	56.4	60.9	49.6	0.4
Grade XI	9,116	54.9	60.1	47.0	0.4
Grade XII	6,998	52.9	54.0	46.1	1.3
Grade XIII	800	46.4	49.1	49.6	1.2

TABLE VI.—NOTIFIABLE-DISEASE INCIDENCE IN BRITISH COLUMBIA, AGE-GROUPS 5–14 YEARS AND 15–19 YEARS, SEPTEMBER 1ST, 1955, TO JUNE 30TH, 1956, INCLUSIVE

Disease	5–14 Years			15–19 Years		
	Male	Female	Not Stated	Male	Female	Not Stated
Chicken-pox	2,376	2,264	3	14	24	----
Conjunctivitis	56	51	----	3	2	----
Dysentery, bacillary (Shigella)	45	30	----	1	2	----
Encephalitis, infectious	2	1	----	------	------	----
Hepatitis, epidemic	87	71	----	9	9	----
Influenza, epidemic	19	16	----	2	103	----
Measles	1,154	1,207	45	44	51	8
Meningitis	7	9	----	1	------	----
Mumps	1,970	1,780	----	52	51	----
Pertussis	263	250	----	1	2	----
Poliomyelitis	28	16	----	6	8	----
Rubella	3,733	3,892	----	585	569	----
Salmonellosis—						
Typhoid fever	2	------	----	------	------	----
Paratyphoid fever	4	5	----	------	------	----
Unqualified	9	6	----	4	3	----
Streptococcal infections—						
Scarlet fever	204	211	----	17	11	----
Septic sore throat	45	57	----	10	6	----
Vincent's angina	3	2	----	1	------	----
Totals	10,007	9,868	48	750	841	8

TABLE VII.—NOTIFIABLE DISEASES IN BRITISH COLUMBIA, 1952–56 (INCLUDING INDIANS)

(Rate per 100,000 population.)

Notifiable Disease	1952		1953		1954		1955		1956	
	Number of Cases	Rate	Number of Cases	Rate	Number of Cases	Rate	Number of Cases	Rate	Number of Cases	Rate
Actinomycosis	.....	.....	1	0.1	1	0.1	.....	.....	.....	.....
Botulism	.....	.....	.....	.....	3	0.2	.....	.....	.....	.....
Brucellosis	12	1.0	5	0.4	7	0.5	13	1.0	4	0.3
Cancer	3,366	281.0	2,785	226.4	3,600	284.4	3,556	272.5	3,115	230.7
Chicken-pox	6,266	523.0	6,869	558.4	6,085	480.6	4,947	379.0	7,113	526.9
Conjunctivitis	346	28.9	193	15.8	64	5.1	134	10.3	115	8.5
Diphtheria	11	0.9	8	0.6	7	0.5	8	0.6	1	0.1
Dysentery—										
Amœbic	1	0.1	1	0.1	.....	.....	2	0.2	.....	.....
Bacillary (Shigella)	102	8.5	588	47.8	605	47.8	293	22.5	342	25.3
Encephalitis, infectious	2	0.2	4	0.3	1	0.1	2	0.2	9	0.7
Hepatitis, epidemic	212	17.7	789	64.1	1,220	96.4	841	64.4	343	25.4
Influenza, epidemic	548	45.7	808	65.7	78	6.2	15,601	1,195.4	4,021	297.8
Leprosy	.....	.....	1	0.1	.....	.....	.....	.....	.....	.....
Malaria	2	0.2	1	0.1	.....	.....	1	0.1	1	0.1
Measles	8,227	686.7	7,646	621.6	6,572	519.1	8,160	625.2	5,616	416.0
Meningitis	33	2.7	42	3.4	47	3.7	48	3.7	45	3.3
Mumps	7,088	591.6	8,071	656.2	3,548	280.3	2,922	223.9	6,768	501.3
Pertussis	976	81.4	717	58.3	1,096	86.6	1,683	129.0	987	73.1
Poliomyelitis	594	49.6	787	64.0	211	16.7	224	17.2	84	6.2
Rubella	1,986	165.8	1,095	89.0	832	65.7	768	58.9	11,297	836.8
Salmonellosis—										
Typhoid fever	30	2.5	10	0.8	11	0.9	8	0.6	32	2.4
Paratyphoid fever	8	0.7	23	1.8	36	2.8	40	3.1	32	2.4
Unqualified	109	9.1	83	6.7	173	13.7	92	7.0	187	13.9
Streptococcal infections—										
Erysipelas	26	2.2	24	1.9	21	1.7	12	0.9	21	1.6
Scarlet fever	4,163	347.5	2,220	180.5	1,355	107.0	757	58.0	645	47.8
Septic sore throat	536	44.7	206	16.7	179	14.1	352	27.0	171	12.7
Puerperal septicæmia	.....	.....	1	0.1	.....	.....	.....	.....	.....	.....
Tetanus	2	0.2	2	0.2	1	0.1	4	0.3	3	0.2
Tick paralysis	.....	.....	.....	.....	.....	.....	.....	.....	1	0.1
Trachoma	3	0.3	13	1.1	4	0.3	6	0.5	2	0.1
Tuberculosis	1,411	117.8	1,494	121.5	1,434	113.3	1,414	108.4	1,331	98.6
Tularæmia	.....	.....	1	0.1	1	0.1	.....	.....	1	0.1
Venereal disease—										
Gonorrhœa	3,057	255.2	2,969	241.4	2,668	210.7	2,508	192.2	3,442	255.0
Syphilis (includes non-gonorrhœal urethritis, venereal)	541	45.2	691	56.2	784	61.9	765	58.6	763	56.5
Chancroid	.....	.....	11	0.9	36	2.8	7	0.5	6	0.4
Vincent's angina	19	1.6	26	2.1	12	0.9	11	0.8	4	0.3
Totals	39,677	3,312.0	38,185	3,104.4	30,692	2,424.3	45,179	3,462.0	46,502	3,444.6

TABLE VIII.—NOTIFIABLE DISEASES IN BRITISH COLUMBIA BY HEALTH UNITS AND SPECIFIED AREAS, 1956

Disease	Total	Health Units and Specified Areas																						
		Boundary	Cariboo	Central Vancouver Island	East Kootenay	Howe Sound-Squamish	North Fraser	North Okanagan	Peace River	Saanich and South Vancouver Island	Selkirk	Simon Fraser	Skeena	South Central	South Okanagan	Upper Fraser	Upper Island	Greater Vancouver Metropolitan Health Committee	Victoria-Esquimalt Union Board of Health	West Kootenay	Mainland West Coast	West Coast of Vancouver Island	Kitimat	Province
Brucellosis	4	1	1														1	1						
Cancer	3,115																							3,115
Chicken-pox	7,113	147	230	256	419	74	134	71	49	835	94	195	49	366	450	51	179	2,315	856	258	35	7	43	
Conjunctivitis	115	4	20		1	6	1	11	2	34		5			6		2		17		1	1	4	
Diphtheria	1													1										
Dysentery, bacillary (Shigella)	342	1	118	20			1	11		13		12	5	35	4	20	7	68	16		2	9		
Encephalitis, infectious	9									1				4					4					
Hepatitis, epidemic	343	1	15	3	5	1		7		4		8	136	25	14	1	7	39	2	63		2	10	
Influenza, epidemic	4,021		132	9		12		2,832		13		10	230	715		1	17	1	19			30		
Malaria	1																			1				
Measles	5,616	124	695	325	39	38	100	149	172	99	55	126	120	317	101	207	63	2,624	134	58	43	10	17	
Meningitis	45		2	1		1		5		4				1	2	2	2	18	5	1			1	
Mumps	6,768	86	111	49	256	215	144	85	8	702	159	173	79	260	800	323	126	2,056	782	349	1	2	2	
Pertussis	987	33	11	33	63	22	4	41		38	37	19		187	112	2	108	86	51	132		6	2	
Poliomyelitis	84	4	8	2			2		4	9	1	8		3	2	10		21	10					
Rubella	11,297	258	116	278	8	202	10	83	47	1,055	37	543	187	296	127	97	112	6,277	1,243	145	16	3	157	
Salmonellosis—																								
Typhoid fever	32	5	16	1									5		1	1		3						
Paratyphoid fever	32	5	7	1									16				2	1						
Unqualified	187	2	4	15		1			1	6	1	8	5	2	3	1	15	120		2	1			
Streptococcal infections—																								
Erysipelas	21		3							2		2						8	2		2	2		
Scarlet fever	645	33	10	12	15	19	3	6	1	69	4	17	3	5	38	37	5	300	36	29			3	
Septic sore throat	171	8	58	2		16				19				3	3		2		27			33		
Tetanus	3						1							1		1								
Tick paralysis	1		1																					
Trachoma	2			1																		1		
Tuberculosis—																								
Pulmonary	1,207																							1,207
Non-pulmonary	124																							124
Tularæmia	1													1										
Venereal disease—																								
Gonorrhœa	3,442																							3,442
Syphilis	195																							195
Chancroid	6																							6
Non-gonorrhœal urethritis, venereal	568																							568
Vincent's angina	4		1							1					1		1							
Totals	46,502	712	1,559	1,008	806	607	400	3,301	284	2,904	388	1,126	835	2,222	1,664	754	649	13,938	3,204	1,038	101	106	239	8,657

REPORT OF DIVISION OF PUBLIC HEALTH NURSING

MONICA M. FRITH, DIRECTOR

Ten years have now elapsed since the public health nurses became Provincial Government employees. During this time unprecedented growth and expansion has taken place in the Province. This has led to a much larger public health nursing service than could have been anticipated ten years ago. During the interval there have been many new scientific and medical discoveries which have altered the public health nursing service to fit in with the changing concepts of prevention and treatment of disease, and the promotion of positive health. Some of the developments include Salk vaccine for the prevention of poliomyelitis, streptomycin for the treatment of tuberculosis cases, greater use of B.C.G. vaccination to prevent tuberculosis, nursing care and housekeeper service in the home, prenatal or parentcraft classes, use of expanded resources for the treatment of crippled and handicapped children and adults, and more emphasis on rehabilitation, mental health, and health education. These developments have required public health nurses with better preparation, and at the same time have led to a more efficient public health nursing service as less essential activities have been dropped to make way for the more concentrated programme which our present health knowledge demands.

The number of public health nurses on the staff has increased 110 per cent in the last ten years to 164 positions in 1956, compared with 77 in 1946. As the population has increased, and new centres of population have sprung up, public health nurses have been added to existing local health services. Thirteen new positions were financed by National health grants during the year. These have been in the Skeena Health Unit at Terrace, the North Okanagan Health Unit at Salmon Arm, the South Central Health Unit at Kamloops, the Simon Fraser Health Unit at Coquitlam, the Cariboo Health Unit at Prince George, the Gibson's public health nursing service, the Upper Island Health Unit at Courtenay and Powell River, the Boundary Health Unit and the Saanich and South Vancouver Island Health Unit where two public health nurses have been added to each unit. In addition, part-time service has been added at Lake Cowichan and in the Alberni Canal area of the Central Vancouver Island Health Unit. Efforts have been made to provide more public health nursing service on a part-time basis in the outlying areas too small for full-time service by employing resident married nurses wherever possible to carry on a programme of health visiting and immunization in their communities. During the year, arrangements were completed for service at Zeballos, Gold Bridge, and Smith Inlet. Part-time service has been given for some time at Tahsis. During the year, public health nursing service has been extended to certain Indian reservations and thus a comparable public health service is now available to Indian and white populations living side by side in certain parts of the Province. The Upper Island Health Unit this year provided service to Campbell River, Cape Mudge, Comox, and Sliammon Reserves; the Simon Fraser Health Unit to the Coquitlam Reserve; the Boundary Health Unit to Langley Nos. 3 and 5, Tsawassen, and Semiahmoo Reserves; Skeena Health Unit to Kitselas Reserve; and Saanich and South Vancouver Island Health Unit to Songhees and Esquimalt Reserves.

STATUS OF THE SERVICE

During the year, fifty placements were made to fill existing public health nursing vacancies. Twelve nurses returned from university following the completion of the public health nursing course and twenty-one nurses without public health nursing qualifications were posted to positions requiring staff. Only three qualified public health nurses were recruited from the course at the University of British Columbia, the remainder being mostly married public health nurses living in areas where vacancies occurred. Once again we have been dependent upon the public health nurses trained by National health

grant bursaries to accept positions in the outlying parts of the Province. It is always difficult to fill vacancies in sub-offices of health units where the public health nurse must work with a minimum of supervision and frequently with very few local resources, and for this reason the National health grant bursaries have filled a great need. This year public health nursing trainees returned to fill positions at Smithers, Nakusp, New Denver, Qualicum, Grand Forks, Greenwood, and Quesnel.

Public health nursing supervisory positions were established at Cranbrook in the East Kootenay Health Unit, at Trail in the West Kootenay Health Unit, at Vernon in the North Okanagan Health Unit, and at Courtenay in the Upper Island Health Unit in order to provide full-time public health nursing supervision to the health units concerned. It is hoped that additional senior positions may be established in the coming year in the larger health units.

Thirty-one resignations were received during the year. Thirteen nurses left, due to family and home responsibilities, seventeen resigned to take other positions, and one resigned to travel. Eleven nurses are on leave of absence to complete public health nursing training at university. Twenty-two transfers of public health nursing staff took place during the year to provide continuity of service in areas where staff adjustments were required.

Although it was necessary to close the Grand Forks, Greenwood, Vanderhoof, and Princeton districts, it was possible to have the services instituted again after public health nursing staff became available in the fall. Public health nurses have been active in recruiting suitable nurses to the field.

PUBLIC HEALTH NURSING CONSULTANT SERVICE

The Division of Public Health Nursing provides consultant service to local health units and nursing districts through the Bureau of Local Health Services. The consultants visit assigned areas twice a year to confer with the public health nursing senior or supervisor and the medical director, concerning the health programme being carried out by the public health nurses. At this time the case loads and work plans of the individual nurses are reviewed with a view to improving efficiency. Suggestions and ideas for the advancement of the service are received from the local health service staff and thus the consultants' visits provide a link between the central administration and the public health nurse in the field. The consultants may be called upon by public health staff to help solve special problems, for example, to advise on control methods for checking staphylococcus infections in a small hospital, as was the case this year.

The public health nursing consultants provide an advisory service to the Bureau of Local Health Service concerning trends and demands for new public health nursing services. For example, through analysis of the annual time study it can be shown that the amount of time being spent by the public health nurse on home visiting has declined from 20.4 per cent in 1952 to 14.9 per cent this year, while time spent by the public health nurses on non-professional activities accounted for 8.5 per cent of the nurses' time this year. This would indicate that some adjustment of the duties of the health-unit personnel should be made so that the public health nurse can devote more time to professional activities and allow less well-trained individuals to carry out non-professional duties. The non-professional activities include such clerical responsibilities as recording routine information, filing and sorting records, cleaning, wrapping and autoclaving syringes and needles, sorting laundry and other housekeeping chores. In an effort to determine the present need for clerical and other non-professional workers in local health service, Miss Alice Beattie, newly appointed public health nursing consultant, was assigned to a study team set up to investigate clerical and non-professional staff needs and to recommend standardized office procedures and administration. We were most fortunate to have Miss Beattie accept the position of public health nursing consultant in March, as she brings

with her a wealth of field experience. Miss Beattie has devoted most of her time since appointment to the survey and has made a very fine contribution to this study.

The reorganization of the public health nursing records committee has been awaiting the findings of the survey team which has been reviewing the various record forms in use in the field. It is expected the committee will be reconstituted in the new year under the guidance of Miss Alice Beattie, public health nursing consultant. The new committee will be comprised of a medical director, four public health nurses, and a representative of the Division of Vital Statistics. During the year, the public health nurses have gradually changed from the visible filing record system to the family folder system. By the use of this system the nurse will have all the health records pertaining to the family available at one time and thus greater efficiency of service will result. Reports for services to Indians were brought in line with the Provincial record system this year.

Mrs. Dorothy Slaughter, public health nursing consultant, has continued to act in a liaison capacity with the Divisions of Tuberculosis and Venereal Disease Control and the voluntary health organizations which have their headquarters in Vancouver. Work has continued on revisions to the Tuberculosis Policy Manual and the general Policy Manual. During the year the Division has worked closely with allied public health agencies, including the Greater Vancouver Metropolitan Health Committee, the Victoria-Esquimalt Health Department, the Indian Health Services, and the Victorian Order of Nurses.

Members of the Division have been on a number of Provincial committees. These include the Provincial Junior Red Cross, Junior Red Cross Crippled and Handicapped Committee, The Junior Red Cross Nursing and St. John's Ambulance Nursing Committee, the Public Relations and Educational Policy Committees of the Registered Nurses' Association of British Columbia, the Advisory Committee to the University of British Columbia School of Nursing, the Provincial Crippled Children's Registry, and the Provincial Mental Health Association Committee.

PUBLIC HEALTH NURSING TRAINING

A university degree or certificate in public health nursing is the requirement for a staff position in the public health nursing field. However, due to inability to attract sufficient members qualified in this manner, it has been necessary to continue the public health nursing trainee programme. In this plan, registered nurses without public health qualifications are taken on staff and given a short orientation period and placed in areas where they will have the opportunity of receiving close supervision. The department has the opportunity to assess the nurse before awarding a National health grant bursary to assist her financially to qualify for a permanent position. The nurse is able to give minimum service in a district for a short period until a qualified public health nurse becomes available. During the year twenty-one nurses were appointed as public health nursing trainees. Ten public health nursing trainees are on leave of absence to complete the diploma course in public health nursing at a university. Seven of this group are in receipt of National health grant bursaries and are required to return to the service for a minimum period of two years. Twelve nurses returned to the staff this summer following completion of this training programme. Thus, the public health nursing trainee programme has proved to be our most reliable method for the recruiting and training of public health nursing staff.

During the year two senior nurses returned to the staff following completion of courses in public health nursing administration and supervision at university and were able to fill supervisory vacancies. Another senior nurse is currently enrolled in a similar programme at McGill University. This training is made possible through National health training grants. It is hoped that it will be possible in the future for all the senior nurses and supervisors to take advantage of advanced training.

Field experience is made available to university students completing the basic public health nursing programme in various health units where qualified staff are available as student field guides. Field experience for nursing students from the University of British Columbia was provided for twenty-nine nurses for a period of from four to six weeks. The following health units provided this experience in the centres noted: The North Okanagan Health Unit, four students at Vernon; South Okanagan Health Unit, four students at Kelowna; South Central Health Unit, two students at Kamloops; Upper Fraser Valley Health Unit, one student at Chilliwack; Simon Fraser Health Unit, three students at Coquitlam; Saanich and South Vancouver Island Health Unit, two students; Boundary Health Unit, four students at Cloverdale and Langley; Central Vancouver Island Health Unit, seven students at Nanaimo, Port Alberni, Ladysmith, and Duncan; Selkirk Health Unit, two students at Nakusp and New Denver. In addition, the Cariboo Health Unit at Prince George provided four weeks of experience for two public health nursing students from the University of Saskatchewan. The numbers of nursing students requiring experience in public health nursing from the University of British Columbia School of Nursing has increased as the new degree programme has had a heavier enrolment than the former programme.

During the year observation periods have been made available for undergraduate nurses from the two Victoria Schools of Nursing, the Royal Jubilee Hospital and St. Joseph's Hospital, and for the Royal Inland Hospital in the South Central Health Unit. It is expected that the Royal Columbian Hospital in New Westminster will be sending undergraduate nurses to the Coquitlam district of the Simon Fraser Health Unit during the coming year. A planned experience in the public health nursing field was arranged for the director of nurses at Tranquille and for six senior staff members. Through these programmes it is expected that better co-ordination between the public health service and hospitals will result.

This year the Simon Fraser Health Unit is providing nursing experience for a limited number of practical nurse students from the Vancouver Vocational Institute in Vancouver. This is the first time that practical-nurse students have had the opportunity of doing practical nursing in the homes in a health unit in this Province. It is hoped that in the future that more practical nurses will receive training in home-nursing procedures and that they eventually may be employed in community home-care nursing programmes.

Each health unit carries on a planned in-service education programme to keep the public health nurses up to date with new developments in the public health nursing field. The health units select their own topics for study based on the need of the particular unit. For example, this year many of the health units have used the booklet " Health Supervision of Young Children " as a guide in studying methods of improving the infant health programmes particularly in relation to better methods of administration, interviewing, and conferencing at child health clinics. During the year a number of public health nurses participated in the course in rehabilitation nursing (body mechanics) which was made available on a local level by the Registered Nurses' Association of British Columbia. Two nurses participated in the civil defence nursing course given at Arnprior.

The Public Health Institute is one of the most valuable means of in-service training and staff education, as it is possible at this time to bring together all members of the nursing staff to learn from experts the best methods of developing current programmes. During the nurses' section meeting an excellent panel was presented on " Hearing and Speech Defects " and " Mental Health," while papers were given on tuberculosis and poliomyelitis nursing at Pearson Hospital. A demonstration was also given on the use of the Wood's lamp. The public health nurses have an opportunity to meet as a group at the Institute and thus the Institute provides one method of staff in-service education and programme planning so that all areas of the Province will benefit.

LOCAL PUBLIC HEALTH NURSING SERVICE*

The public health nurse is a member of the local health-unit staff and as such works under her immediate public health nursing supervisor or health unit director. Ocean Falls, Gibsons, and Howe Sound are the remaining nursing districts where the public health nurse works alone and receives assistance from the local part-time medical health officer. Each public health nurse is responsible for an assigned area in which she provides generalized public health nursing service. Because of the steadily growing population and demand for service in rural areas, it has become increasingly difficult for the public health nurses to carry the nursing programme which is growing along with the expansion in this Province. Although the recognized standard of one public health nurse for 5,000 population for a generalized health programme and one public health nurse to 2,500 population with a bedside programme is used as a guide for nursing needs, it is not possible to use this standard arbitrarily as very rural districts with scattered populations involving long travel distances make it necessary for the public health nurses to serve smaller areas. The public health nurses serve in a great variety of communities and must adapt the service to fit the available local resources, methods of communication, and travel, as well as weather conditions. The public health nursing service has been divided into the following arbitrary categories:—

Maternal Health—Prenatal and Postnatal

As the prenatal period is known to be most important in affecting the future health and development of the new-born child, more emphasis is being placed on prenatal education in order to insure potentially healthy citizens. Parentcraft classes have continued for expectant mothers and in some cases fathers, to prepare them for new family responsibilities. This year twenty-two centres gave classes, which represents an increase of ten centres over last year. The classes consist of lectures and discussions on the hygiene of pregnancy, prenatal and family diet, and such items as demonstrations of the baby's layette and bath, and techniques of child-care. Relaxation exercises are given at most centres in conjunction with the class. Basic equipment, including the demonstration layette, teaching films, posters, basic reference texts, and mats for exercise classes, was again provided for the new centres through National health grants. Prenatal classes have almost doubled attendance since last year with a total attendance of 3,511. In addition, 1,839 home and office visits were made to expectant mothers. There were 16,999 postnatal visits to mothers following return home from hospital with the new baby.

Child Health—Infant and Pre-school

The guidance and instruction in care of the new-born child which the mother receives soon after her return home from hospital has a most important influence on the future health of the infant. Therefore the public health nurses attempt to make at least one visit to the home to give assistance and further visits are arranged as required. Priority is given to premature and new babies, babies of unusually young mothers, or mothers with special language or other problems. Following the initial visit, mothers are invited to bring their infants and pre-school children to child health conferences which are held at regular intervals throughout the public health nurse's district. Usually the infants attend monthly during the first year or until the basic immunizations are completed and then at less frequent intervals during their pre-school years. At the child health conferences the mothers have the opportunity of discussing the physical and mental development of their children with the public health nurse and receiving anticipatory guidance. Child health conferences have gradually been placed on the appointment system so that the clinics are

* Figures shown in this section apply only to the seventeen local health units and nursing districts and do not include the metropolitan health departments of Vancouver, Victoria-Esquimalt, or Oak Bay.

better organized and less waiting results. Child health conferences in the rural areas are frequently held in private homes, schools, or halls. Many of these locations are not too satisfactory, but attendance has continued as the child health conference proves more and more helpful to mothers.

Child Health—School

The public health nurse supervises the health of the school-children in her district. These children may be located in a number of schools so that routine visits to the schools are arranged in order that service may be provided on a definite schedule by the public health nurse. The public health nurses average 33.1 per cent of their time to the school health service without counting the time required for travel to the schools, and to the homes for home-school visiting. School service includes teacher-nurse conferences, immunization, referral, and follow-up of children requiring special assistance, assistance with medical examinations on selected children, tuberculin testing, and home visits as required. This year a considerable amount of time was devoted to the Salk vaccine programme for protection against poliomyelitis. All school-children in Grades I to IX, plus pre-school children about to begin school, had the opportunity of receiving protection with Salk vaccine. This was a tremendous undertaking which was completed with the assistance of volunteers.

The public health nurse concentrates on the children needing special attention as her time can be best used in this manner. In addition, the public health nurse acts as a health consultant in the schools and is in a position to give guidance to the teachers in health teaching and other health problems which arise in the school. The nurse will refer children needing special treatment or care to their private physicians and may in turn assist in obtaining special help if required from voluntary health agencies such as the Canadian National Institute for the Blind, the Junior Red Cross, the Crippled Children's Hospital, the Health Centre for Children, the Queen Alexandra Solarium, and the Preventorium.

During the year an attendance of 50,731 infants and 52,606 pre-school children at the office or at child health conferences was recorded. In addition, public health nurses made 27,161 infant home visits and 27,706 pre-school home visits for health supervision. During these visits the public health nurses may discuss such items as dietary problems, need for protection by immunization, need for correction of physical defects such as cleft palate and harelip, speech defects, and crippling conditions.

During the year the public health nurses assisted with 24,690 medical examinations, and in addition made 109,442 nursing examinations and inspections. The public health nurses held 57,544 conferences with school staff, 37,790 with pupils and 8,552 with parents. Health problems concerning 72,929 pupils were reviewed. A total of 25,634 visits were made to the homes of school-children, while 3,749 conferences were held with parents in the office. A total of 172,445 doses of biologicals were given to children at school.

Tuberculosis

The public health nurse assists with the tuberculosis-control programme by case-finding methods and through the supervision of the tuberculosis patients and contacts in her district. A total of 6,668 visits were made by the public health nurses to tuberculosis cases, and 7,623 to contacts of cases of tuberculosis. Four-fifths of these visits took place in the homes, while the remainder were in the nurse's office. The nurses continue to give streptomycin injections to patients as ordered, and this year 15,454 injections were given. This year it is encouraging to note that it was possible to arrange for the patients to come in to the office or a clinic for slightly less than half of the treatments. B.C.G. is given to tuberculin-negative contacts to cases and to special groups such as hospital employees. The amount of B.C.G. given was double that of the previous year with a

total of 543 vaccinations. As the present trend indicates that more cases will be treated in the community, more time will of necessity be devoted to the treatment and supervision of tuberculosis cases and contacts by the public health nurse.

Other Communicable Diseases

The communicable-disease control programme includes the organization of clinic services for immunizations which are held at various child health centres and schools throughout the public health nurses' districts. During the year an intensive poliomyelitis-vaccination programme was carried out for the protection of pre-school children about to enter Grade I at school, and for school-children in Grades I to IX. A total of 87,447 injections of Salk vaccine were given. There were 9,589 children who completed the series of injections for protection against whooping-cough, 13,938 for diphtheria, 13,294 for tetanus, 35,893 were vaccinated against smallpox, and 1,342 received protection against typhoid fever. In all, a total of 361,022 individual doses were given by field staff this year. The immunization programme has been increasing gradually as may be illustrated by the fact that over 100,000 more treatments were given this year than five years ago. In addition to the above there were 2,577 prophylactic injections, such as anti-measles serum and gamma globulin given for protection from other communicable diseases. Public health nurses made a total of 4,683 home visits, and held 487 office consultations for the purpose of communicable-disease control.

The venereal-disease control programme continues to be emphasized in the Cariboo and Skeena Health Units where the incidence is highest in the service. An epidemiology worker has been seconded to the Cariboo Health Unit by the Division of Venereal Disease Control and has been effective in the venereal-disease control programme in the area concerned. A total of 878 office and clinic visits were made for venereal-disease control, while 369 home visits were made for this purpose.

Nursing Care

Organized programmes of bedside nursing care in the home were extended this year when the Upper Island Health Unit introduced this service in the Courtenay-Comox-Cumberland districts in February, and in the Municipality of Powell River in April. Additional nursing staff were added so that each nurse could reduce the size of her district in order to add the necessary home-nursing to her generalized programme. Nursing care is provided from 8.30 a.m. to 5 p.m. each day including week-ends and holidays and must be ordered by a private physician. During the first nine months a total of 619 nursing visits were made to 55 patients in the Courtenay-Comox-Cumberland area, while a total of 181 visits were made to 38 patients in the Powell River area during the first eight months of operation. The number of calls has increased gradually as the service has become better known.

Saanich Municipality, in the Saanich and South Vancouver Island Health Unit, continues to provide the largest volume of nursing care of the areas providing this service, as may be illustrated by a total of 4,082 nursing visits. This is an increase over a similar period one year earlier.

The North Okanagan Health Unit in Vernon continues to operate the pilot study hospital home-care programme in conjunction with the Vernon Jubilee Hospital. During the year the regular public health nursing staff were relieved of week-end call duty as local, part-time, married public health nurses were recruited for this purpose. The number of nursing visits has also shown an increase over last year with 469 recorded for the first nine months of the year. It is estimated that a total of 1,389 hospital-days were saved by this service during this same period.

Kelowna in the South Okanagan Health Unit continues to provide a bedside nursing service, in conjunction with the housekeeping service which is sponsored locally.

It should be pointed out that nursing care in the home is provided routinely by all the public health nurses on a short-term and demonstration basis. This includes such procedures as hypodermic injections, enemas, treatments, and dressings as ordered by a physician. In an emergency the public health nurse will give more extensive nursing care and teach someone else to carry on the daily routine. The amount of nursing care provided routinely varies with the local demand. A total of 16,011 nursing-care services (exclusive of streptomycin injections) were rendered this year.

GENERAL

The public health nurse provides a family health service in which she is prepared to do general health teaching and to assist in solving the health problems of the various individuals in the family group. Public health nurses visited a total of 80,472 homes during the year for this purpose. The public health nurses refer persons needing special assistance to the appropriate health and travelling clinic, the Children's Hospital clinic, the cancer consultation clinic, and the Child Guidance Clinic. Many referrals to other health agencies in Vancouver, such as the Health Centre for Children and the Canadian National Institute for the Blind, were made possible with the assistance of the Junior Red Cross funds for transportation. In addition to the types of service mentioned, public health nurses made 2,271 home visits and held 280 office conferences concerning individuals with mental health problems. A total of 55,657 home visits and 16,445 conferences were made for adult health.

The scope of the public health nurses has continued to extend, and with increasing demands for service, public health nurses continue to work under pressure in order to provide good public health nursing service in their districts.

REPORT OF THE DIVISION OF ENVIRONMENTAL MANAGEMENT

THOMAS H. PATTERSON, DIRECTOR

This Division is responsible for the provision of consultant service in nutrition, sanitary inspection, Civil Defence Health Services, and occupational or industrial health from the Provincial level. In addition to consultant service in occupational health, the Division operates an Employees' Health Service within the Parliament Buildings, whereby civil servants receive the professional service of one industrial nurse.

As the services associated with nutrition, sanitation, Employees' Health Service, and Civil Defence Health Service are well established, they are reported on, in separate section reports which follow.

The establishment of a sound occupational health service, however, has not yet been accomplished. There are currently at least three Government agencies interested in taking limited steps to provide some service in this field, and it would appear necessary to clarify with all agencies concerned, the part and responsibility the Health Branch might have in developing such a service.

In the opinion of the Director of this Division, there is no doubt that the most effective service to industry on a Province-wide basis can be developed through the utilization of public health nurses, doctors, and sanitary inspectors who are already providing public service in the health units throughout the Province. It is true that many industries need to employ full and part-time medical and nursing personnel, but in this Province as elsewhere in Canada and the United States the greatest number of workers are employed in plants and industries which are too small to employ health staff.

Most health problems encountered in industry are non-occupational in origin and might not, therefore, be considered of interest to management of industry. It should be remembered, however, that regardless of whether illness or injury is occupational or non-occupational in origin, the resulting time-loss or reduced working capacity of the worker has the same economic impact on production. Therefore, it is in the interest of all companies to protect and promote good health among all employees.

It is encouraging to see a growing interest in industrial health service on the part of the medical and nursing professions as well as among some of our industrial-management groups. An opportunity presented itself during the year to attend a meeting of a group of personnel officers and to present a talk on the problems of employee health. The interest of this group in the recognition and management of these problems ran very high.

A Board of Trade group in British Columbia has requested that consideration be given to holding a symposium on the subject of industrial health at one of their meetings. This tends to follow the line along which the Pacific Northwest Industrial Health Conference was started three years ago. This Conference is now an annual three-day affair, sponsored by the Chamber of Commerce of Portland, Ore., and is attended by representatives of labour and management of industry, as well as from professional medical, nursing, and engineering groups. The Industrial Health Committee of the Greater Vancouver Health League has also continued to encourage industry to develop industrial health services.

During the course of the year, lectures on industrial medicine were given to undergraduate medical students at the University of British Columbia. These lectures served to introduce this subject to the students in such a way that they may realize not only the need for medical services in industry, but the type of service required and the type of greatest value to the employees and employers.

Two large companies have requested advice on the type and method of setting up industrial health services required for their employees. The industrial nurse now operating the Employees' Health Service in the Parliament Buildings also gave advice on

request to a number of nurses employed, or going to be employed in British Columbia industries. A few physicians also requested advice concerning either specific industrial health problems they had encountered, or concerning the proper management of industrial health services.

Special occupational health problems continue to arise, and many are carried over from past years. For instance, in the field of radiation there is a growing awareness of the hazards associated with this phenomenon. A survey by questionnaire was carried on throughout the Province to determine the number and types of X-ray shoe-fitting machines being operated in British Columbia. It was revealed that there were many older type machines in operation which could quite likely be capable of scattering considerable stray radiation, but to measure this would require special equipment and personnel. In addition, detailed measurement of this type of radiation would only serve to assess the magnitude of one part of the hazard. It is extremely important that the operators of these machines know the dangers of radiation, both to themselves and to the customers. Children particularly, can suffer serious exposure to the growing bones of their feet, when these machines are used to excess. There is definitely some question as to the value of this type of equipment as an aid to proper shoe fitting, but until more definite steps can be taken to control its use, this department is undertaking to provide safe operating instructions to all operators. Also, a warning card for public information has been provided and is expected to be placed in a prominent position on each machine.

Concerning other types of radiation hazards, the Department of National Health and Welfare is continuing to provide a film monitoring service, the use of which the British Columbia Health Branch is promoting in hospital and clinical X-ray units and in industries where X-ray and radioactive isotopes are used. All reports of the readings of these monitoring badges are collected and recorded by this Division. Although it is desirable that some of the levels of radiation now experienced by some employees be lowered, there would appear to be a definite reduction occurring among those persons using these badges. This might exemplify the educational value of these badges, in keeping the employees aware of the fact that carelessness in handling radiation is a serious matter.

Because of the newness and still incomplete knowledge of the handling of radioactive isotopes for industrial purposes, handlers have been very cautious in their dealings with isotopes and for this reason it has not become of major concern to date. On one occasion, however, a rather disturbing report was made to this Division concerning possible mishandling of one of the isotopes on a construction project. On further investigation it was found that correct handling procedures were being carried out at the time of the visit and that the operators were alert to the possible dangers. With the growing use of these procedures in industry, particularly away from the larger centres, public health personnel are going to have to closely observe the handling techniques in order to protect the health of operators and workers in the vicinity of these operations.

One example of other types of problems referred to this Division concerned the escape of ammonia fumes from a printing establishment into living accommodations situated above the plant. Here, improved local exhaust ventilation was recommended.

Several questions concerning the use and toxic effect of insecticides were referred to this Division during the year and two industrial situations leading to possible lead poisoning were investigated.

The need for a laboratory, properly equipped and staffed to carry out chemical analyses and field investigations for both the public health engineering division and the occupational health service, is quite evident and plans have been developed in this regard. The Department of Mines Laboratory in Victoria has continued to give assistance when requested, but such requests undoubtedly impose an extra burden on the already very busy staff of this laboratory.

A number of the interests of the Health Branch might be considered the joint responsibility of the Director of Public Health Engineering and the Medical Director of this Division. The growing problem of atmospheric pollution was under joint review by these two Directors during the year. Similarly, the ventilation requirements for the proposed Deas Island tunnel were also reviewed from a health-engineering and medical viewpoint by these two Divisions of the Health Branch.

Growing awarness of the importance of accident prevention in the homes and on the highways has led this Division, along with others, to take an active interest in this subject. In recent years the medical representatives of the Health Branch have been called upon to interpret to the Motor-vehicle Branch the ability of certain persons to drive an automobile safely while subject to various physical handicaps. In this regard also, a special committee of the British Columbia Branch of the Canadian Medical Association has been formed to determine standards which physicians might use for reference in making recommendations to the Motor-vehicle Branch upon individual examinees.

Unfortunately there are very few statistics available concerning the extent of the problem of home accidents. At present, only accidents resulting in death are reported to the Health Branch, but there is no doubt that a considerable number of preventable accidents result in temporary, or even permanent disability. Some means of finding the cause and incidence of these accidents is necessary if a proper control programme is to be developed. One possible source of valuable information in this regard is through the hospital admission-discharge records now being collected by the British Columbia Hospital Insurance Service.

An important step has been taken in this Province with the establishment of a Poison Control Centre in Victoria. This Centre is operated on a 24-hour basis from the Royal Jubilee Hospital, and stands ready to give information concerning antidotes and treatment for all known poisons. A similar centre is being planned for Vancouver.

Prevention of accidents is primarily a matter of public education and in this regard the British Columbia Safety Council has now established a Community Safety Section, in which this Branch has representation. The objective of this Section is to promote the development of local safety councils and to guide and assist these councils in preventing accidents in homes, schools, recreational activities, and in agriculture.

The Health Branch has worked closely with the Department of Education in developing a programme of first-aid instruction in schools throughout British Columbia. Should this type of training be adopted as a regular part of the school curriculum it would eventually result in a major portion of our population having at least a basic knowledge of how to save lives and to deal with the most common emergencies. This would serve to supplement the training now being sponsored by the Civil Defence office and the St. John Ambulance Association.

A. NUTRITION SERVICES

The role of the Nutrition Services is the practical application of nutrition knowledge. This is carried out by a nutrition education programme directed toward the improvement of food habits and the wise selection of food from the abundant variety available to-day.

Consultant Service to Local Public Health Personnel

Nutrition education reaches many of the people of the Province through the public health team by means of prenatal classes, child conferences, and home and school visits.

Consultant service has been provided to local health units by keeping personnel informed on the latest nutrition information, by providing technical data and educational material, by giving advice and assistance with projects and problems. Some of this service was provided directly by visits to health units.

The areas to which nutrition education was directed in 1956 were mainly community health, maternal and child health, and school health.

Community Health

Food budgeting and the planning of low-cost adequate menus are an important consideration in the wise selection of food. Information on this subject was provided to the local newspapers. Much advice and help has also been given to the local public health personnel on this subject.

"Family Meals," a publication much used by housewives, was revised with the co-operation of the Vancouver Nutrition Group.

Maternal and Child Health

A leaflet, entitled "A Guide to Food Selection for Expectant Mothers," was prepared in co-operation with the Professor and Head of the Department of Pædiatrics, University of British Columbia, and the Vancouver Nutrition Group, and approved by the Committee on the Foetus and New Born, of the British Columbia Division of the Canadian Medical Association. This has been made available to physicians and to public health personnel for use in their prenatal classes, which are conducted in many areas of the Province.

The services of the nutrition consultant were used by the Victoria-Esquimalt Health Department during discussions on food selection with prenatal classes.

School Health

Dietary studies using Canada's Food Rules as a guide have indicated that the chief deficiencies in school-children's meals are milk, cheese, Vitamin D supplements, and foods rich in Vitamin C. Excessive consumption of sweet foods and soft drinks, which contribute to dental decay, were evident.

Instruction within the schools has been planned to direct attention to these deficiencies. The keeping of food records followed by rat-feeding demonstrations has been a graphic means of teaching the value of good eating habits. Fifty-four rat-feeding demonstrations were carried out with the kind co-operation of the Animal Nutrition Laboratory at the University of British Columbia, who supply the rats.

An outline for menu planning for use in dental clinics and offices was compiled by the Nutrition Consultant and the Director of the Division of Preventive Dentistry. This outline, based on Canada's Food Rules, shows what foods should be chosen for dental health.

School-lunch programmes in many schools enable children to obtain milk and other food supplements to their carried lunches or, in many cases, a full meal. Advice has been given in several schools on the planning of these meals.

In co-operation with the Vancouver nutritionists and the Vancouver School Board dietitians, the school lunchroom section of the School Planning Manual was revised at the request of the School Planning Division of the Department of Education.

Consultant Services to Hospitals and Institutions

Consultant services in co-operation with the British Columbia Hospital Insurance Service were arranged for several hospitals. Eleven hospitals were visited and information given on menu planning, purchasing and cost control, food preparation, personnel management, sanitation, and the selection of equipment. Visits on a consultant basis were paid to one private hospital in Surrey, to the Queen Elizabeth Hall (Home for the Aged Blind), the British Columbia Alcoholism Foundation Home, the British Columbia Cancer Home, and to New Haven. Routine visits have also been paid to Oakalla Prison Farm.

A study was made of the food costs at Tranquille Sanatorium and a report containing recommendations was submitted.

A thorough survey was made of the food service of the Dominion-Provincial Vocational Training School in Nanaimo, at the request of the Director of Technical and Vocational Education there.

Technical information was provided to the Department of Fisheries at their request.

Samples of numerous foods were tested for the Purchasing Commission to determine their flavour and general quality.

Emergency feeding courses at the Civil Defence College, Arnprior, Ont., were attended by the nutrition consultants in February and May, respectively. Assistance was given to local Civil Defence officials in organizing a course in emergency feeding, which was given in Victoria.

General Observations

The Vancouver Nutrition Group, composed of nutritionists from the Vancouver Metropolitan Health Committee, University of British Columbia, Vancouver General Hospital, this Department, and other agencies, meets to co-ordinate nutrition activities within the Province and to act as a common meeting-ground for general discussion and the interchange of ideas on nutrition problems.

The programme of 1956 has continued to work for the improvement of the nutritional status of the people of the Province. A loss was suffered in August by the resignation of Miss Doris Noble, who had contributed greatly to the Nutrition Services for the last ten years.

B. SANITARY INSPECTION SERVICES

The Division provides a broadly planned programme of practical assistance and consultation service to the local sanitary inspector and medical health officer in the prevention and correction of health hazards. The continuing, conscientious efforts of local health services with a keen appreciation of the needs of the public provides the personal element in elevating hygenic practice in food control, industrial transient housing, private water supplies, private sewage disposal, rodent and insect control, and other community sanitation matters. Firm policy procedures in the categories of barber-shop hygiene and quality milk control were established during the year, which allows for closer liaison between the inspector and the operator, yet provides the means for a disciplinary action in maintaining statutory obligations.

In meeting the demand for increased service, the establishment of thirty-three sanitary inspectors was increased to thirty-five. Five vacancies in staff, one by death and four by resignation, occurred in the year. As a means of maintaining staff requirements despite the shortage of qualified persons, seven sanitary inspectors-in-training, employed by the Department, successfully completed the examination conducted by the Committee on Certification, Canadian Public Health Association.

An intensive two-weeks' course in plumbing was provided for sanitary inspectors and plumbing inspectors employed by the Regional Planning Division, Department of Municipal Affairs.

Milk

For the sixth consecutive year an evaluation has been made on the bacteriological quality of pasteurized milk. An average plate count of 9,600 colonies per cubic centimetre was obtained from 1,933 samples from seventy-nine vendors. Each successive year since 1950 this tabulation has indicated improvement over the previous years. The relatively low plate count indicates that on the average a comparatively good milk, in bacterial quality, is being supplied to the consumer. Nine of the seventy-nine vendors failed to meet the allowable limit of 50,000 colonies per cubic centimetre. A further six vendors ranged between 30,000 and 50,000 colonies per cubic centimetre or, a total of

fifteen vendors failed to qualify in the new standards contained in the regulations pursuant to the "Milk Industry Act," 1956. Comparative figures for six years are summarized as follows:—

AVERAGE PLATE COUNTS ON PASTEURIZED MILK, 1950–1955

Year	Number of Vendors	Number of Milk Samples	Average Plate Count per C.C.
1950	56	586	22,000
1951	45	728	13,000
1952	56	1,021	13,700
1953	68	1,386	10,300
1954	74	1,930	10,000
1955	79	1,933	9,600

In 1956 the "Milk Industry Act" was passed and legislation under the "Health Act" and "Municipal Act" was repealed. A new Act provides for co-ordination of the activities of the veterinary inspector on the policing and grading of farm premises, the Dairy Branch inspector on policing and licensing of dairy plants, and the sanitary inspector and medical health officer in policing the bacterial quality of the milk as delivered to the consumer. All of which places a line of demarcation on inspection duties and removes overlapping of inspections often encountered in the application of the previous legislation.

Under the "Milk Industry Act," compulsory pasteurization is the rule. The exception to this rule enables municipalities to adopt raw-milk by-laws. Forty-three municipalities are reported as having taken advantage of this exception. However, less than 5 per cent of the milk so distributed is non-pasteurized.

It was the privilege of this Division to assist the Department of Agriculture in the preparation of the regulations pursuant to the "Milk Industry Act," to assist on the Government-Farmer Committee on Dairy Farm Standards, to assist the Live Stock Commissioner in the orientation of veterinary inspectors to the bacterial standards and policies of enforcement of the new regulations, to assist the dairy commissioner in the orientation of Dairy Branch inspectors to bacterial standards and requirements of municipal milk by-laws, to work with the Department of Municipal Affairs in the preparation of a model milk by-law for a municipality, and to participate in the presentation of the annual plant operators' short course conducted at the University of British Columbia.

Municipal milk by-laws for The District Municipality of Powell River; Cities of Armstrong, Kaslo, Trail, Rossland, and Kelowna; and villages of Gibsons Landing, Squamish, Fruitvale, Warfield, Montrose, and North Kamloops were reviewed prior to submission for approval by the Lieutenant-Governor in Council.

EATING PLACES

The inspection of eating and drinking places is an important feature in the routine activities of the sanitary inspectors. Only three complaints were received by the Division during the year. All these complaints concerned the lack of rest-room facilities for patrons. While most premises provide rest-room facilities or permit the use of the employees' facilities, it is not a requirement by the regulations that facilities be available to the patron. A women's organization, by resolution, requested that rest-room facilities for patrons be mandatory in all restaurants.

Food-handling classes sponsored by health units, and emphasis on proper food-handling techniques by the sanitary inspectors on routine visits are credited with lowering criticism of public eating places. More important is the minimum incidence of food-

poisoning episodes in recent years. Attendance at these classes has been on a voluntary basis. It is recognized that it is the participation of the better-class establishment and particularly the members of the Canadian Restaurant Association that has contributed to the success of the food-handler training programme.

Food Control

Inquiries were made concerning alleged inferior food products, including cut-up poultry, shell-fish, imported eggs, cereals, and the transportation of meat in summer months without adequate refrigeration. Liaison on these items and related matters is maintained with the Inspection Division, Food and Drugs Branch, Department of National Health and Welfare.

Slaughter-houses

There are seventy-four slaughter-houses in the Province, licensed annually under the "Stock Brands Act," Department of Agriculture. Before a licence is issued or renewed the operator is required to obtain a certificate of inspection completed by the medical health officer and attach the certificate to the application for a licence. If the application is not accompanied by the inspection certificate, the issuance of the licence is held in abeyance until the requirements of the sanitary regulations have been met. Eight applications on the initial submission in 1956 were not accompanied by an inspection certificate and required follow-up through this Division. This approval-licensing arrangement has been in operation for seven years and has proven mutually satisfactory to the Department of Agriculture and the Health Branch and has raised the sanitary standards of slaughter-houses.

Meat Inspection

It is estimated that 90 to 95 per cent of meat sold in the Province is inspected in abattoirs under Federal licence. In most of the remaining 5 to 10 per cent, the animal is slaughtered in slaughter-houses approved by the medical health officer or the animal is slaughtered and inspected under municipal by-law. Cities with municipal inspection are Vancouver, Kelowna, Penticton, Vernon, Salmon Arm, and Kamloops.

For several years the Union Boards of Health and other agencies passed resolutions requesting meat inspection to supplement that now carried out in Federally licensed abattoirs. The passing of the "Meat Inspection Act" in 1954 has not satisfied the proponents for meat inspection and resolutions received in 1956 propose the requested supplementary inspection be carried out by the appointment of Provincial meat inspectors.

Industrial Camps

Joint planning of industrial camps by the operator and the sanitary inspector has proven particularly effective in elevating industrial camp standards. The regulations for the sanitary control of industrial camps were used as the guide in the planning. This type of programme provides for quality in accommodations provided by the employer and an appreciation of the accommodation by the employee.

Native Indian housing at the salmon canneries on the Skeena River was given more than the usual attention by the cannery operators, both individually and in committee, and by the medical health officer.

Further to the 1955 survey by the Director of the Division, assisted by the local medical health officer and with the co-operation of the Aluminum Company of Canada, progress was made toward the elimination of that segment of camp housing which is substandard.

The use of tents and other substandard housing was encountered in the industrial activity on Vancouver Island. Corrective measures were instituted after review by the contractors and the medical health officers.

Conventional trailers, designed by manufacturers, continue to increase in number on temporary construction projects. These trailers are limited to accommodate five workers. Exception is made to the rule where separate recreational facilities are provided and use is extended, by permit, to accommodate six persons.

Summer Camps

The usual co-operation was given to the Welfare Institutions licensing authority in the inspection of camps, with recommendations leading to the licence granted under the "Welfare Institutions Licensing Act." The emphasis in the course of inspection is to discuss good sanitation practices with the operator.

In the evaluation of the thirty-nine camps reported in 1956, twenty-nine were classified as good, eight as fair, and two as poor. Comparative ratings for the inspections of 1951 through 1956 are as follows:—

Class	1951		1952		1953		1954		1955		1956	
	Number of Camps	Per Cent	Number of Camps	Per Cent	Number of Camps	Per Cent	Number of Camps	Per Cent	Number of Camps	Per Cent	Number of Camps	Per Cent
Good	22	46.0	35	62.0	29	61.5	48	63.0	44	55.0	29	75.0
Fair	18	36.0	13	23.0	13	27.5	24	32.0	28	35.0	8	20.0
Poor	6	12.0	4	7.5	3	6.5	3	4.0	5	6.5	2	5.0
Unsatisfactory	3	6.0	4	7.5	2	4.5	1	1.0	3	3.5	—	—
Totals	49	—	56	—	47	—	76	—	80	—	39	—

Plumbing

The sanitary inspector normally acts as a consultant to municipalities and endeavours to limit plumbing inspection to public buildings and occasional private premises in unorganized territory. As many municipalities have adopted the National Building Code, sanitary inspectors were given a two-weeks' intensive course in the interpretation of the National Code to better fit them as advisors to the municipal plumbing department. As plumbing inspection is related to the normal activities of the sanitary inspector, municipalities within health-unit areas often request routine plumbing inspection under the auspices of the health unit. The Health Branch policy has been to resist assuming this additional work load. Exceptions have been made on the health-unit level until the municipality arranges to assume this function.

Likewise, the routine inspection of Central Mortgage and Housing Corporation septic tanks within municipalities has added to the load of the sanitary inspector, and health units have been encouraged to stimulate the municipalities to assume the inspection within the municipal boundary and reserve the inspection on the health-unit level to unorganized territory.

Trailer Parks

With increasing popularity of self-contained trailers as a means of housing, particularly in the vicinity of construction projects and as tourist accommodation, many inquiries have been received concerning the establishment of trailer parks. Information on auto-trailer park by-laws has been supplied to all health units and to some municipalities. Two requests were received proposing trailer-park regulations under the "Health Act."

Barber-shops and Beauty-parlours

Expenditure in time on this phase of sanitation was increased this year, pursuant to rescinding regulations of the Provincial Board of Health, 1936, and replacing with the "Regulations for the Sanitary Control of Barber-shops," 1955. The policy of inspecting

and method of recording inspection were decided by the Health Officers' Council, 1955. Inspections on the part of the health officer prior to this year supplemented the "self-inspection" process conducted by the Barbers' Association of British Columbia, by inspectors appointed from within the ranks of the trade. Routine inspection in 1956 by the sanitary inspectors, under the new regulations and requested by the Association, resulted in 548 reports being submitted to this Division. For the most part shops are of a high standard and the operators as a rule have a keen appreciation of hygiene practices. The problem of the trade in the evaluation of sterilizing cabinets has been solved from the information gathered from the reports.

Pest-control

Mosquito larviciding and control is carried out on an increasingly larger scale each year and is done in all sections of the Province. Costs of the measures employed must be borne by the local areas. The Health Branch budget is designed for expenditures for the control of communicable disease and the mosquito in British Columbia is not considered a factor in the transmission of disease. Seven requests were received for grants-in-aid. Despite having to turn down the requests for aid, the medical health officer is, however, able to offer advisory services on eradication measures when financed locally.

Co-operation with the Laboratory of Hygiene, Department of National Health and Welfare, continues. The City of Victoria routinely collects rodent specimens in the rodent-plague activities, and the South Okanagan Health Unit collected ticks during the early summer months in search for Rocky Mountain Spotted Fever incidence.

Garbage-disposal

Several requests are received each year toward locating Crown land for municipal areas and communities in unorganized territory. Many municipalities look to sites beyond their boundaries for the establishment of refuse-disposal grounds. In most areas Crown land is available. The medical health officer assists in locating possible sites and the local authorities make application to the Lands Department to have the parcel reserved. These sites are often used jointly by the residents of the municipality and residents of the adjacent unorganized territory. As the population of the municipality increases, a municipal collection system is invoked under by-law and more attention is given to maintaining the disposal-site, often to the exclusion of residents of unorganized territory. The excluded persons then request a separate site. As any disposal-site is a nuisance-ground, the Health Branch feels one such nuisance-ground in a locality should suffice. It is the policy of the Division to stimulate municipalities toward extending the use of the disposal-site to residents of unorganized territory at a nominal charge per deposit to the non-municipal residents.

C. CIVIL DEFENCE HEALTH SERVICES

The changing concepts of Civil Defence which result from studying world affairs and the potential striking force of possible enemies, has introduced the present trend of thinking along the lines of evacuating total populations from target areas in the event of the outbreak of war.

Planning for such large scale evacuations does not negate the need for continued development of previously designed disaster plans for hospitals and communities. Plans for evacuation or disaster allows either alternative to be used according to the dictates of circumstance. The responsibilities now placed on Civil Defence planners and personnel have therefore been greatly increased and may no longer be considered part-time occupations if proper planning and organization is to be expected.

Hospital Planning

With a policy of evacuation of target areas being considered, the Federal Civil Defence Health Services realized that the evacuation of hospitals would constitute a special problem. There was not any reliable information available on this continent that could be utilized to aid or instruct hospitals how to plan for this emergency. Therefore, it was thought that if one large hospital in Canada could be persuaded to carry out an evacuation scheme, a great deal of basic essential information would become available.

St. Paul's Hospital in Vancouver had developed an excellent disaster plan which was demonstrated in 1955 and, when approached concerning the evacuation-plan proposal, readily volunteered to participate providing financial and staff assistance would be forthcoming. After two and a half months of detailed study and planning, which involved not only St. Paul's Hospital but the services and personnel of the Civil Defence offices of Burnaby, Vancouver, the Provincial and Federal Governments, a very successful exercise was carried out in November.

The exercise consisted of the evacuation of 100 simulated patients of the types usually found in St. Paul's Hospital throughout the year. These patients were actually admitted to beds throughout the hospital and then on a given signal were evacuated by bus, transport truck, and cars to an improvised 200-bed hospital set up in a school in Burnaby.

The exercise proved that such a procedure was feasible, but that there were many problems to be faced for which solutions were required. A full report of the study will be published when all the data and observations are complete.

Many hospitals in British Columbia do not yet have disaster plans developed, but several have requested assistance in this regard. An added stimulus to the development of these plans is now being given in that such a plan is required and must be approved before the hospital may receive accreditation by the Joint Commission on Accreditation of Hospitals.

Survey of Facilities and Personnel

In 1950 a questionnaire was sent out to all health units requesting information concerning the number of persons in each area who were trained to carry out medical, nursing, or first-aid duties in time of emergency and also information concerning existing hospital facilities and other accommodation which might be converted to emergency hospitals. This information was reviewed and brought up to date again in 1956. The potential ability of any community to cope with disaster or to give assistance to another disaster area can be estimated by studying these data and they are therefore of use to the Provincial Civil Defence office in directing Province-wide operations.

Training

In addition to the first-aid training being carried on throughout the Province, more specialized training for professional personnel was offered during the year. Two courses on ABC Warfare were held in the Civil Defence College at Arnprior, Ont., for physicians and dentists. British Columbia sent a total of nine candidates to these courses.

Two indoctrination courses in ABC Warfare were held for nurses at Arnprior and fourteen nurses were able to attend these courses from British Columbia.

The training for pharmacists who are expected to act as supply officers in the Civil Defence Health Services was increased by having nine pharmacists attend the course held at Arnprior during the year and by having twenty-seven British Columbia pharmacists attend a course sponsored by the British Columbia Provincial Civil Defence office and held at the University School in Victoria.

One other important type of health service training was supplemented by having twelve more candidates attend the Casualty Simulation Course put on by the Federal Civil Defence College at Arnprior.

In order to integrate the various Civil Defence Health Service organizations and also to study the many problems encountered in all the Provinces an Inter-Provincial Civil Defence Health Service Conference was held in Ottawa during the year. Representatives of this Province and of the City of Vancouver were in attendance at this meeting.

Study Forums

The Provincial Civil Defence office carried on three more study forums during 1956. The health problems presented in these forums varied from those encountered in the previous year because of the fact that each of the areas in which they were held were reception areas expecting tremendous increases in population, due to evacuation of target areas. Rather than preparation for casualty treatment, the emphasis now falls on prevention of communicable disease, protection of water supplies, maintenance of sewage and sanitary services, and it was quite evident in each of these forums that a strong public health service in peace-time was the key to coping with the problems of mass evacuation in time of disaster.

D. EMPLOYEES' HEALTH SERVICE

The prime objective of the Employees' Health Service is the conservation of the health of the employees of the Provincial Government in Victoria. A full-time occupational health nurse is located in the Health Centre, Room 132 of the Douglas Building. When necessary the services of a physician are available.

During the year the Health Centre has made available health counselling and emergency medical services for both occupational and non-occupational illnesses and injuries to approximately 3,000 Provincial Government employees. Although all Provincial Government employees in Victoria are eligible to make use of this service, the greatest number of patients come from the Parliament Buildings or their immediate surroundings. The farther away the employees were from the Health Centre, the less they utilized it. The following table gives a comparative analysis of the activities and services rendered by the Health Centre during 1955 and 1956.

	1955	1956
Number of visits—		
Total	2,714	3,384
First visit of occupational or non-occupational disease or injury	914	1,141
Repeat visit	939	831
Follow-up	351	374
Consultation, doctor or nurse	403	408
Visitors to health centre	39	14
Civil Defence	8	0
Requested visit before returning to work	8	12
Miscellaneous	62	58
Visits by sex—		
Male	1,570	1,610
Female	1,144	1,774
Classification—		
All new diseases	485	669
Occupational	14	6
Non-occupational	471	663
All new injuries	429	472
Occupational	181	215
Non-occupational	238	257

All repeat visits	939	831
Occupational	149	167
Non-occupational	770	664
Disposal—		
Sent to hospital	11	30
To physician, dentist, specialist	122	146
Sent home	35	86
Returned to work	2,040	2,354

In reviewing the analysis of the services and activities rendered by the Health Centre, several factors must be considered, as follows:—

(*a*) The Health Centre is closed when the nurse is making surveys, conducting clinics, lecturing, taking in-service training, and attending meetings pertinent to occupational health in Vancouver. Due to these factors it is felt that the case load of the Health Centre has increased considerably more than the figures indicate.

(*b*) The Health Centre is used as a teaching unit, to make the employee aware of his responsibility for his health and to teach him practical first-aid measures by his correct handling of his own injuries and illnesses.

During the year 162 reports on accidents were submitted to the Workmen's Compensation Board, but of these only thirty-six cases required the attention of a private practitioner and only fourteen lost working-time as a result of their condition.

It is worthy of note that record-keeping is one of the most important duties of the occupational health nurse. Accuracy and completeness of records about compensable conditions are important for legal reasons and for statistical data related to occupational and non-occupational illnesses and injuries. Through tables and graphs of these records the Employees' Health Service can illustrate the health trends of the employees as well as its own accomplishments and needs.

This last year a greater variety of personal and personality problems was seen. This is probably due to many causes—the emotional stress created by the lack of trained professional personnel causing a heavy load of supervision and teaching, the change in the type of people working, and the unrest caused by the series of crises and increasing world tensions. The type of health counselling is also changing due to the influx of working mothers, older workers, and new Canadians. This influx has also brought new health problems, such as those related to pregnancy, fatigue, and the diseases of the older employed group. Many older people, especially those due to retire soon, tend to be prone to tension. Then again, many new female employees who are also married, have conflicts of interest between their marriage and their job, with the result that family and job troubles grow to major proportions. Thus morale, health, and work all suffer.

Constructive Medicine (Counselling and Health Education)

Counselling, the art of interpreting and making available special knowledge or resources to those who desire them, is an important function of the Employees' Health Service. Often, an employee using the Health Centre for a minor injury or illness is made aware of symptoms which show a predisposition of that individual to a certain illness. After he has thoroughly understood the need, a referral of this individual to his family doctor has resulted in early recognition of the condition and more effective treatment. It is during this initial visit that the nurse establishes the rapport on which future counselling depends. Employees inquire not only about their own health, but also the health of their families. Many patients, after their visit to their family doctor, utilize the Health Centre for treatments or injections ordered by their doctor. In this way illness or injury

is continually under the surveillance of medical personnel. There is less danger of secondary infection, less absenteeism, and a shortened period of convalescence or rehabilitation.

Many patients present symptoms such as headache, fatigue, difficulty in relaxing, and anxiety or depression, without any apparent physical basis. These symptoms usually denote excessive tension. Simply by being objective and a good listener, the occupational health nurse can let the employee talk about his problems and his feelings. By discussions with the nurse the employee is often able to understand for the first time what is really bothering him. However, if the employee's problem warrants it, he is referred to the appropriate clinic, agency, or physician. Symptoms such as the above are common. They result in a great loss of time and operating efficiency.

Needs of the employee are often expressed in the types of health pamphlets he selects. In this way, health education during his visit can be directed to his needs. Much practical nutrition teaching has been done as the employees are becoming aware of its importance in daily living.

The counselling service at the Health Centre helps the employee to preserve his greatest asset—his health. It also helps to teach habits of sound living and to delay many of the disabling conditions that develop over the years.

Emergency Medical Care

Emergency medical care is the immediate and temporary care given in case of accident or illness before the services of a physician can be secured. Patients with minor illness and injuries are kept under medical surveillance and treatment and are instructed in safety and the care of injuries. At other times illnesses and injuries are referred to the family doctor.

In reviewing the cause of an accident, the following is considered: The presence and use of safety devices, the physical and mental handicap of the employee, any unsafe act or unsafe condition, and the general housekeeping of the area. For example, many of the accidents reported have occurred at 10 a.m. or 3.30 p.m. This is indicative of a fatigue state, which is a common complaint. It may be caused by lack of proper skill or increased responsibility, lack of interest in the job, emotional conflict, imbalance between work and play, or lack of sleep. Fatigue may be a defensive method in meeting psychological needs of the individual. It can be understood why no injury or illness is too minor to warrant attention at the Health Centre.

Surveys

Lighting study was conducted again this year where complaints about eye strain and headaches seemed to indicate that poor lighting might be the cause. The report was forwarded to the appropriate department.

Because of the evident lack of an adequate job description for occupational health nurses, a comprehensive study was made of records and reports, home-visiting, and accident prevention. The remaining portions of this study were gleaned from articles in nursing periodicals. This report, in the form of a brochure, was sent to the occupational health nurses throughout the Province.

A manual of employee health services policies and procedures was also compiled and assisted greatly in giving constructive criticism to a procedure manual now under discussion at a National level. A reference list of publications pertinent to occupational health nursing in British Columbia is also being completed.

A review was made of the absenteeism rates and records of the civil servants compiled for the Civil Service Commission by each Government department. These forms were devised for statistical data and could not in their present form be used by the Employees' Health Service. However, need of an absenteeism report is under discussion.

For the convenience of the employees, the Canadian Red Cross Society's Blood Donor Service held two clinics at the Parliament Buildings. The total response was 592. A number of Government employees are on call and donate regularly at Red Cross House, Victoria.

An active part was taken by the occupational health nurse in community health and welfare projects in the form of lectures, committee meetings, conferences, and institutes. An Occupational Health Nursing Institute was held in Vancouver, the theme of which was to define the function of the occupational health nurses, their standards, and their qualifications for practice. This institute provided an excellent learning experience for many nurses now employed, and for relief nurses of the nurses in industry. After obtaining these nurses' opinions during the workshops, a committee continued follow-up and completion of the standards. Ways and means of putting this statement into effective use for the betterment of occupational health nursing services in industries of British Columbia is under study. Nurses in isolated parts of the Province or those unable to attend the Institute were kept informed by data sent from the Employees' Health Services.

The active participation and attendance at these meetings has developed a greater rapport between the nurses and this office. Numerous requests of minor and major proportions regarding the operation facilities and personnel of health services in industry have been received. Research into these various problems has been done. It is felt that much more could be accomplished by the consulting occupational health nurse making personal visits to industry in order to see at first hand the facilities, programme, and attitude of management. Production of British Columbia's industries is dependent in part on the health of the working population. The services of the industrial nurse, properly used in industry, is one major means of achieving this goal.

REPORT OF THE DIVISION OF PREVENTIVE DENTISTRY

C. W. B. McPHAIL, ACTING DIRECTOR

To-day in public health, as in many community health services and agencies, we are concerned not only with a longer life, but as well with a better life. Based upon the number of deaths directly attributable to dental disease, it could be argued that this disease is not a community or public health problem. However, when we consider that over 95 per cent of our population is afflicted with one form or other of dental diseases, and knowing the undermining effect that such diseases can have upon the well-being of the individual, both physically and emotionally, as well as socially, and at practically any period of life, we must surely agree that dental health is a public health problem. If in addition we consider the discomfort and suffering as well as the economic factors involved, it is then apparent that this problem is of sufficient size and severity to warrant not only our deep concern but our combined efforts to combat.

Further, when we note the prevailing high incidence of dental disease and the tremendous backlog of untreated disease, plus the shortage of dental man-power, it is obvious that treatment, although a very important factor, is not, and can not alone be the answer. What then is the answer? With dental disease, as it has been in the past with many other diseases, including smallpox, diphtheria, scarlet fever, and tetanus, the answer lies in prevention.

However, unless people are sufficiently aware of and concerned with the importance of dental health as it relates to general well-being, knowledge of prevention will not be generally sought; nor, even if known, will it be put into action.

Therefore, our first objective—the chief weapon in prevention—is an educational programme designed to stress the important role that dental health plays in the welfare of an individual throughout his life span; to *stress* the enormity of the problem as it exists; and to point out how good dental health may be achieved and maintained by practising the principles of prevention both on an individual and community basis.

The second weapon in a preventive dental health programme is dental treatment itself. A dental treatment programme designed particularly for the younger-aged groups serves these functions:—

(1) It acts as an inducement and a liaison to bring more people into the scope of preventive dental health services, both from the standpoint of establishing early and regular dental examination and care, as well as from the standpoint of establishing good dental health habits at an early age.

(2) It illustrates dramatically the importance of good dental health as well as exemplifying the effectiveness of preventive dental health measures.

(3) It provides a means whereby a portion of dental time from a busy general practice may be devoted to children's preventive dentistry.

(4) It shares, on a community basis, the initial accumulated cost of restoring neglected mouths to good dental health, thus insuring that the large initial expense of restoring a neglected mouth to dental health does not prove to be a stumbling-block in an educational programme which promotes the importance of early and regular dental examination and treatment.

The third weapon of prevention is research. Only through constant research will new ways be found of preventing and treating diseases of the mouth, evaluating the problem of dental disease, and measuring the success of procedures already in use.

OUTLINE OF THE PREVENTIVE DENTAL PROGRAMME IN BRITISH COLUMBIA

The existing preventive dental health programme initiated by the Health Branch, Department of Health and Welfare, in 1949, through the Division of Preventive Dentistry, is designed not only to include these basic principles of prevention (i.e., education, treatment, and research) but, as well, to extend such services to as many communities

throughout British Columbia as present limited finances and dental man-power will permit. This has been attempted by an equitable distribution of available funds for treatment and educational services to the various communities throughout British Columbia, as follows:—

(*a*) Grants are made available to some larger established areas of population on a Grade I school-enrolment basis toward the establishment and maintenance of full-time dental health services. Periodically, new equipment is added through the use of National health grants:

(*b*) Fifty per cent matching grants-in-aid to various areas throughout British Columbia are made toward the cost of treatment services through community preventive dental clinics sponsored by local groups and agencies within the community. National health grants contribute toward such services:

(*c*) Transportable dental equipment on a loan basis, free of charge, and a grant toward the cost of travel, are made available and the Health Branch acts as a liaison in attempting to encourage dentists to visit the outlying areas of British Columbia where dental services are in short supply, or non-existent:

(*d*) Grants are made available toward the cost of establishing, equipping, and maintaining part-time dental clinics for use by dentists in private practice to provide part-time treatment services for children, apart from their private practices:

(*e*) Subsidy grants are made available to encourage dentists to locate in those areas which have no dentist and which normally would not support the services of a dentist full time:

(*f*) The dental services of full-time members of the Health Branch are made available to some areas.

(*g*) The Health Branch, through Federal health grants, has equipped the Health Centre for Children in Vancouver. By agreement, dental treatment is also provided for trainees referred from the Western Rehabilitation Centre and for children from the Cerebral Palsy Society of Greater Vancouver through this Centre:

(*h*) Payment by the Department of Health and Welfare, Social Welfare Branch, is made for dental care for dependents of persons in receipt of social assistance, presently including children of less than twelve years of age. This fund is administered by the British Columbia Dental Association.

An outline of the scope and coverage of the preventive dental programmes, including the distribution of these various types of services and grants throughout the Province for the programme-year (September, 1955, to August, 1956) is shown in Tables I and II.

Education

A wide selection of posters, pamphlets, films, and film-strips suitable for the various grade levels was made available and distributed to many schools throughout the Province from the central library of the Health Branch. Where possible, a display of these various teaching aids was set up at teachers' conventions. Pamphlets were made available to dental offices for distribution to young patients and parents.

Arrangements were made for window displays during the opening week of school in drugstores throughout the Fraser Valley, to emphasize that the child's dental health is another important consideration in preparing the child for this important step in his development. Poster-display contests were encouraged in the schools to emphasize the

" how," " when," and " why " of good dental habits. Community groups were encouraged to arrange dental-health displays at local fairs, etc., with some success. An attempt was made to have dental-health manuals distributed to school libraries as reference material for both teacher and student.

Radio talks and classroom talks were given by various members of the health-unit staffs. All dentists participating in the clinics were encouraged to devote time to chairside dental-health education of both parent and patient. Material prepared by the Canadian Dental Association suitable for press release or for presentation to parent-teacher associations, service club meetings, etc., was distributed throughout the Province by the health units. The Health Branch co-operated fully with the British Columbia Dental Association during their " Dental Health Week " and " Dental Health Conference." A new poster and a diet sheet were added to the list of teaching aids during this period. A " quick reference " to dental-health habits suitable for dental chairside teaching and use in the home is presently under consideration.

Treatment

A prime factor in treatment services for these clinics was the dire shortage of dental time particularly in the rural areas of the Province. However, excellent co-operation of the dental profession was enjoyed, resulting in services being rendered as shown in Tables I and II.

Research

A study was undertaken by a member of the dental field staff on a dental follow-up programme on Grade II children. The character of the follow-up programme for Grade II pupils was in the nature of a pilot study to lead and suggest the way whereby all children over the eligible age of the clinics may be stimulated to begin or continue good dental-health habits.

A method of more accurately determining the number of children in given rural areas attending their family dentist is under consideration so that a better over-all picture of treatment coverage may be obtained.

Pre-fluoridation surveys were arranged for areas contemplating fluoridation. The centres of Smithers, Prince George, and Kelowna have instituted fluoridation. Prince Rupert and McBride passed favourably, and Cranbrook is presently contemplating such a procedure.

A much needed method, both for estimating the size of our dental-health problem and for evaluating the effectiveness of our present approach to this problem, has been provided by the introduction of the annual British Columbia Dental Health Survey. The three areas chosen for study as being representative were the Fraser Valley, Greater Vancouver, and Greater Victoria. Complete procedure, data, and analysis from the first (1956) of such surveys are given in Division of Vital Statistics Special Reports Nos. 17 and 18, entitled " British Columbia Dental Health Survey (1956), Parts I and II." Copies may be obtained by writing to Health Branch, Department of Health and Welfare, Victoria, B.C.

The Role of the Community

The success of all these preventive measures, particularly educational, is determined largely by the degree of interest and co-operation of various groups in a community. Who are these groups?

1. Members of the allied health professions and ancillary personnel of medicine, dentistry, nursing, and pharmacy whether in public service or private practice, who, by the very nature of their professions, are dedicated to the welfare of their fellowman.

2. Members of local official bodies, who, by the nature of their office, carry the responsibility of public welfare, whether it be in the field of education, civic administration, social welfare, workmen's compensation, or public health.
3. Members of voluntary agencies, such as the Red Cross Society.
4. Members of the teaching profession who, by the nature of their training, are best qualified to educate.
5. Members of local groups who make the welfare of their community their concern, including parent-teacher associations, service clubs, women's institutes, women's auxiliaries, etc. Added to these must be the individuals comprising the community.

Dental Personnel

Dr. F. McCombie, Director, has accepted an appointment to act as Consultant to the Department of Dentistry, University of Malaya, for a period of one year. Dr. C. W. B. McPhail is serving as Acting Director while carrying on his duties as Regional Dental Consultant during Dr. McCombie's absence. One field dental officer returned from, and one left for, a year of graduate study in Public Health during 1956. One dental officer attended a three-day postgraduate course in preventive orthodontics; five dentists in Public Health Services in British Columbia attended a three-day course in children's dentistry. All of this training was supported financially by National health grants. One field dental officer left the Department to return to private practice.

GENERAL REMARKS

Our dental-health problem in British Columbia to-day presents three pertinent facets:—

(*a*) A heavy burden of treatment needs:
(*b*) An overloaded and limited supply of qualified dental personnel:
(*c*) An unequitable distribution of existing services throughout the Province.

The approach to our problem would, therefore, appear to be threefold:—

(*a*) A reduction in the tremendous burden of treatment needs by the immediate and widespread application of all available preventive measures:
(*b*) An increased supply of qualified dental personnel in British Columbia by the immediate establishment of a dental faculty at University of British Columbia; and
(*c*) A more equitable distribution of the existing facilities as outlined in the policy of the Division of Preventive Dentistry.

In an attempt to enhance this aspect the Health Branch has recommended that the matching grant toward the cost of clinical services be based upon an increased fee, more commensurate with that of private practice, in order to induce more dentists, either from within or outside the Province, to participate in these clinics in the rural and outlying areas of British Columbia.

An effective preventive programme must include education, treatment, and research predicated upon sufficient qualified personnel to carry out such services. In addition, in every community, each group has a part to play in all of these aspects, and it is only through the combined and deliberate efforts of all of these groups that we can hope to meet our dental-health problem.

TABLE I.—PART-TIME DENTAL-TREATMENT SERVICES IN BRITISH COLUMBIA (COMMUNITY PREVENTIVE DENTAL CLINICS), SCHOOL-YEARS 1948–49 TO 1955–56

School Year	Local Health Units in Which Clinics Operated[1]	School Districts in Which Clinics Operated[2]	Number of Clinics Operating	Number of Dentists Participating	Pre-school Children Dentally Completed[3]	Grade I School Enrolment of Clinic Areas	Number of Grade I's Dentally Completed	Total Completed, Pre-school, Grades I, II, and III	Average Grant per Child (Dollars)
1948–49	([4])	([4])	2	2	([4])	([4])	([4])	([4])	([4])
1949–50	([4])	([4])	6	8	([4])	([4])	([4])	([4])	18.46
1950–51	([4])	([4])	9	12	([4])	([4])	([4])	([4])	15.76
1951–52	([4])	([4])	18	22	([4])	([4])	([4])	([4])	13.26
1952–53	([4])	([4])	20	25	([4])	([4])	([4])	([4])	12.78
1953–54	([4])	([4])	43	47	([4])	([4])	([4])	([4])	15.45
1954–55	15	35	55	64	1,553	5,166	2,601	5,777	7.78
1955–56	14[5]	37	59	74	1,753	7,888	3,260	6,444	7.73

[1] Seventeen health units in British Columbia.
[2] Eighty school districts in British Columbia.
[3] "Dentally Completed" includes examination, fillings, extractions, cleaning and dental X-rays where indicated.
[4] Figures from 1948–54 not included, comparison used for years 1954–55 and 1955–56 only.
[5] Two had clinics arranged but could obtain no dental services, one had the services of a full-time dental officer, and one had the services of both full-time dental officer and clinics.

TABLE II.—FULL-TIME PREVENTIVE DENTAL TREATMENT SERVICES IN BRITISH COLUMBIA, SHOWN BY LOCAL HEALTH AGENCY, SCHOOL-YEARS 1954–55 AND 1955–56

Local Health Agency	School Districts Included	Pre-school Children	Grade I Pupils					Total of Other Grades Dentally Completed
			School Enrolment	Dentally Completed (1)	Requiring no Treatment When Examined (2)	Attending Family Dentist (3)	Total of Columns 1, 2, and 3	
1955–56 School-year								
South Okanagan Health Unit	Nos. 14, 15, 16, 17	Services temporarily discontinued due to resignation of dental officer.						
North Okanagan Health Unit	Nos. 19, 21, 22, 28	89	669	455	84	61	620	8
Central Vancouver Island Health Unit	Nos. 66, 68, 69	433	Pre-school programme only.					
Sub-totals[1]		522	669	455	84	61	620	8
Greater Vancouver Metropolitan Health Committee	Nos. 38, 39, 41, 44, 45	907	10,594	3,276	3,889	2,447	9,612	944
Board of Trustees, New Westminster School District	No. 40	Full-time dental programme changed to Community Preventive Dental Clinic (January, 1956)						
Powell River and District Preventive Dental Clinic	No. 47	340	313	30	Suspended, May, 1956, no dentist. Complete data not available.			600
Board of Trustees, Greater Victoria School District	No. 61	46	1,847	117	737	694	1,548	14
Totals[1]		1,815	13,423	3,878	4,710	3,202	11,780	1,566
1954–55 School-year								
Totals[1]		1,853	13,506	4,213	3,945	1,749	9,907	No data

[1] Includes only those areas where clinics operated.

REPORT OF THE DIVISION OF PUBLIC HEALTH ENGINEERING

R. BOWERING, DIRECTOR

The Division of Public Health Engineering functions within the framework of the Health Branch as part of the Bureau of Local Health Services. The aim of professional public health engineering is to control the physical environment, either directly or indirectly, so that the health and comfort of man may be protected or improved.

Engineering in public health involves the planning of procedures and policies; the review of the design of structures, equipment, and facilities; the investigation of conditions; and the control of natural forces—all for the purpose of affecting the physical environment for the protection and improvement of the public health. The Division of Public Health Engineering employs registered professional engineers who are trained for that part of public health work which is directed toward the solution of problems in water-supply, sewerage, waste collection and disposal, and the control of the environment in the prevention of communicable diseases.

The demand for public health engineering services was on the increase during 1956, along with the increase in population. In addition, with the increasing wealth of the Province, and improving living standards, there has been an increased demand for water and sewerage services in many of our communities. In order to cope with the numerous diversified problems involved in public health engineering, a full staff of fully trained public health engineers with postgraduate training is required for the Division. Unfortunately, it was not possible to recruit new engineering staff during 1956 to replace engineers who had left in 1955. The result is that the Division was short-handed throughout the entire year and many of the items that were slated for 1956 were not accomplished.

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 waterworks systems be submitted for approval. A careful study of these plans, together with inspections on the site in many cases, is one of the major duties of the Division. The Division also keeps a check on new materials used in waterworks construction. During 1956, fifty-five plans in connection with waterworks construction were approved, and six plans were provisionally approved. This is a total of sixty-one waterworks plans studied, compared with fifty-two the year before. As well as approving plans, engineers from the Division visit various waterworks systems in the Province from time to time for the purpose of checking on sanitary hazards and to give advice and assistance generally toward their improvement. The number of field visits was greatly reduced this year owing to shortage of staff.

There are very few complete water-treatment plants in British Columbia, owing to the fact that in British Columbia most sources of water provide satisfactory water for domestic consumption without expensive treatment. In many cases, only bactericidal treatment is required. Most of the larger waterworks systems in the Province use chlorination for protecting the bacteriological quality of the water. It is estimated that about three-quarters of the population of the Province use water protected by chlorination. Another type of treatment of water was introduced into British Columbia in 1955, when two communities installed fluoridation equipment. A third community installed fluoridation equipment in 1956. A public health engineer was present at the time the equipment was installed and great care was taken to see that the local operator knew how to operate the equipment and how to see to it that the fluoride added to the water was within proper limits. Reports have been received regularly and these reports indicate that the chemical is being added properly.

It was the intention of the Division to try to organize some sort of training for waterworks operators in the Province. This has become necessary because of the large number of waterworks plants having chlorination equipment. Owing to the shortage of staff, it was not possible to organize such a programme in 1956. Contacts were made with the training section of the United States Public Health Service and the State of Washington and several of our waterworks operators were able to attend a short course in Washington State. There is, however, a need for such a course in British Columbia.

The regular frequent sampling of water from public water-supply systems is the responsibility of the local health unit. The Division of Laboratories performs the bacteriological examinations of the samples. Copies of the results are forwarded to the Division of Public Health Engineering, where they are recorded for easy reference. In this way a constant check is kept on the bacteriological quality of the water served in British Columbia.

In addition to the bacteriological examination of water, there is need for a chemical examination of water. During 1956 there was great difficulty in having chemical examinations made, but it is hoped that the Division of Laboratories will have a chemical-analyses service operating in 1957.

The Division receives a number of inquiries each year concerning private water-supplies. These are referred to the 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 health-unit officials on various small water-supply problems. The present estimate of persons in the Province receiving water from public waterworks systems is 83 per cent of the population, or about 1,000,000. Of the thirty-six municipalities organized as cities, thirty-four own their own water-supply systems, one is completely served by a private utility company, and one does not have a public water-supply system. Of the thirty-four cities owning their own systems, twenty-two obtain water by gravity only, eight obtain water by both gravity and pumping, and four obtain water by pumping only. This means that most of the water supplied to the cities of British Columbia is from gravity sources. Most of the cities have a very soft water, with the larger coastal communities all having a hardness of less than 25 ppm. as calcium carbonates.

Of the thirty district municipalities, twelve have municipally owned water-supply systems that serve practically the whole municipality, four have no water-supply systems and seven are served wholly or in part by privately owned water systems.

There are approximately fifty communities incorporated as villages in the Province. Of these, thirty-two have a municipal water system, thirteen are served by non-municipally owned water systems, and five have no water systems.

Of the thirty-two municipally owned supplies, only three get their water by gravity entirely, seven get water by pumping and gravity, and twenty-two get water by pumping only. Ten of the villages obtain water from ground sources, and two have combined ground and surface water sources. Two of the villages use filtered surface water, twelve use chlorine treatment and one uses fluoride treatment.

In general, the municipalities of British Columbia are well supplied with water. It is estimated that 89 per cent of all people living in municipalities of all classifications obtain water from public water-supply systems. In most cases, the sources of water are plentiful and can be developed to supply water for a greatly increased population.

It is gratifying to note that, in keeping with the normal trend, there have been no known water-borne epidemics resulting from the use of public water-supplies in British Columbia this year. This fact is evidence of the care being taken by the various water authorities to provide a safe water-supply for the citizens of British Columbia. This record, however, should not be allowed to bring about a feeling of complacency, because the bacteriological quality of a number of water-supplies could be improved by more

efficient operation of the chlorination equipment. There is also need for revision of our laws regarding watershed protection. The Division is always ready to assist any water-supply authority with respect to water-supply problems that may have an effect on the public health.

SEWAGE DISPOSAL

The Division of Public Health Engineering has the responsibility of reviewing plans for extensions, alterations, and construction of sewerage systems. This includes the sewage-treatment plants. The "Health Act" requires that plans of all new sewerage constructions be approved before construction may commence. During the year, fifty-four approvals were given in connection with sewerage work and twelve provisional approvals were made, for a total of sixty-six approvals with respect to sewage. This compares with thirty-five in 1955. This is an indication of the tremendous amount of work that is being done in sewerage field at the present time.

Study of the plans for approval includes the study of profiles and plans of appurtenances, so that a good standard of sewerage work is constructed. Study also includes treatment-works, if any, and studies of the receiving bodies of water, in order to determine the degree of treatment required. It is expected that several entirely new sewerage systems will be built during the coming year. The Village of North Kamloops and the Village of Mission City both passed referendums on sewerage during the December elections.

It was mentioned in the 1955 Report that the Vancouver and Districts Joint Sewerage and Drainage Board had published a report on the ultimate disposal of sewage from the Greater Vancouver area. In 1956 the "Greater Vancouver Sewerage and Drainage District Act" was passed, which made for mandatory membership in the Greater Vancouver Sewerage District by the City of Vancouver and the District of Burnaby, together with the University area. Provision was made for voluntary joining of the Board by other municipalities. The District of Coquitlam subsequently joined the Board. The Greater Vancouver Sewerage Board will now commence building the central Burnaby Valley sewer. The three north-shore municipalities, the District of West Vancouver, the District of North Vancoucer, and the City of North Vancouver, have also proceeded very well in their sewerage planning. It is expected that a very large volume of sewerage construction will be carried out during 1957 in the Greater Vancouver area.

It was also mentioned in the 1955 Report that a change in policy by the Central Mortgage and Housing Corporation had required that, whenever a subdivider was developing a subdivision containing a large number of homes, complete sewerage services had to be installed if the houses were to receive "National Housing Act" loans. During 1956 some of these privately built sewerage systems were completed. One of them has completed a complete sewerage system with sewage-disposal plant, which is now in operation.

The problem of the unorganized urbanized area is still a major one as far as lack of sewerage is concerned.

The question of sewage disposal for private homes comes generally under the direction of local health services. However, the plans and specifications are provided by the Division of Public Health Engineering. Also, advice is given to local health services regarding private sewage-disposal problems. It was hoped in 1956 to publish a booklet bringing up to date all the information we have on septic tanks and private sewage-disposal systems. Owing to the shortage of staff, this was not possible.

The Division also gives advice and reviews plans of sewage-disposal systems for schools and hospitals. The Division also provides consultative service regarding sewage-disposal problems for Government institutions.

There is need also for better training of sewage-treatment plant operators. It is felt that the time has come when short schools should be established in British Columbia. However, a considerable amount of work is required for the establishment of a short school and this matter has had to be held in abeyance in 1956.

It is felt that the existing sewage-treatment plants would be better operated if more visits could be paid to them by public health engineers. In February, a fairly detailed study of the sewage-treatment plant at Kelowna was made and as a result, the City employed a firm of consulting engineers to suggest plans for modernizing the plant. Another interesting feature this year was the construction of the first sewage-lagoon in British Columbia. This was built at Dawson Creek and the results so far have been satisfactory, although it is still too early to determine whether or not this will become a good method of sewage treatment in British Columbia. If it does prove to be a good method of sewage treatment in British Columbia, important economies in sewage treatment can be obtained, particularly by the smaller communities. A sewage-lagoon was suggested by the Division for the treatment of the sewage from Tranquille Sanatorium.

STREAM POLLUTION

Stream pollution is one of the items dealt with by the Division of Public Health Engineering. Although stream pollution may be part of the sewage-disposal problem, and a part of the water-supply problem, it is felt that it is important enough to discuss it under a separate heading.

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 wastes and the quality and volume of the receiving bodies of water. The net result of such discharges, however, may make the water less desirable and less useful.

Stream pollution in the Province is not extensive at present as there are only a few instances where waste discharges have affected down-stream water-users. However, it is recognized that control should be established in order to prevent pollution, rather than to wait until it becomes a problem. The Health Branch has had general legislation for the control of municipal wastes for a number of years. Control of pollution by sewage under this legislation 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 the control of certain types of pollution. Groups interested in fishing, navigation, public water-supplies, irrigation, and bathing places are concerned with sewage pollution.

In the 1956 Session of the Legislature a "Pollution-control Act" was passed for the purpose of setting up a Pollution-control Board. Administration of the Act is the responsibility of the Minister of Municipal Affairs. The Pollution-control Board will only have authority in the Lower Fraser Valley and the contiguous waters offshore. The Board had not been completely appointed by the end of 1956 so that very little was accomplished by the Board in 1956. One of the features of the legislation is that engineers of the Health Branch are responsible for carrying out technical work required by the Board. This will entail a considerable amount of survey work and detailed study of plans for industrial-waste treatment as well as for sewage treatment. Additional staff are urgently needed for this work, which should get under way early in 1957.

In summary, with the passing of the "Pollution-control Act" and setting up of the Board, there is now better machinery for controlling pollution, particularly in the Lower Fraser basins. There is some demand on the part of the public for having the powers of the Board extended to include air pollution. It is felt that it would be better at the moment to confine the operations of the Board to water pollution until the Board gets under way.

SHELL-FISH

The Division of Public Health Engineering has the responsibility of enforcing the shell-fish regulations. The 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 under their jurisdiction. Reports are made on uniform records issued by this office. The Department of National Health and Welfare also has an interest in shell-fish control, since it has to approve certificates for export purposes. The Provincial regulations are such that any shell-fish produced in the Province in conformity with the regulations will conform with the requirements of the Department of National Health and Welfare.

Oysters produced commercially in British Columbia are grown on leased ground. Copies of all applications for new leases and for renewal of existing leases are forwarded to this Department for approval. Any ground found unsuitable for production of shell-fish for public health reasons will not be leased. In some areas, the pollution survey of a proposed oyster lease can be made relatively easily, but in others a considerable amount of survey work is necessary. There were twenty-eight certified shucking plants in operation in 1956. Most of these were family operations. Certification must be renewed annually. There were four shell-stock shippers certified as well. Lists of certified shucking plants and shell-stock shippers are forwarded to the Department of National Health and Welfare, which, in turn, forward these to the United States Public Health Service. This makes it possible for American importers to know if shell-fish came from certified plants and shippers.

Some sanitary survey work was done at Peddar Bay during 1956. However, the amount of work done was not suitable to determine whether or not this area should be used for production of shell-fish.

The matter relating to shell-fish toxicity is one that is still under consideration. Assaying of clams by the laboratory of the Department of National Health and Welfare, in co-operation with the Federal and Provincial fisheries and health agencies was continued in 1956. There have been no deaths due to the eating of toxic shell-fish in British Columbia since 1942.

SWIMMING AND BATHING PLACES

A considerable amount of time was spent during the summer in consultation work on swimming-pools. There is a good demand for the paper that was prepared several years ago by the Division on suggested requirements for swimming-pools. This paper has had an excellent effect in that many of its recommendations have been adopted by persons building and operating swimming-pools.

FROZEN-FOOD LOCKER PLANTS

Under the regulations governing the construction and operation of frozen-food locker plants, plans of all new construction of locker plants must be approved by the Deputy Minister before construction may commence. The Division studies the plans and recommends approval where such is indicated. At the end of 1956 there were 145 frozen-food locker plants in operation in the Province. Approvals were given in connection with four locker plants during 1956. There are approximately 60,000 lockers available for rent in British Columbia. In addition to this, by September, 1955, there were 24,000 home freezers in operation in British Columbia.

As indicated by the activity in 1956, the construction of new frozen-food locker plants has passed its peak. The day to day inspection of the locker plants is the responsibility of the local health units.

GENERAL

The Division of Public Health Engineering provides a consultation service to other divisions of the Health Branch and to local health units on any matters dealing with engineering in public health. This entails a considerable amount of work and travel. During 1956 it was not possible to visit all of the health units. During the visits to the various health units, problems requiring engineering knowledge for their solution are examined in the field.

There has been a considerable increase in reviewing of plans of subdivision for recommendation with respect to possible sanitation hazard at the request of the Department of Highways, who are the approving officers for subdivisions in unorganized territories. In most cases, the actual inspection of the ground is made by local sanitary inspectors in correspondence with the Division of Public Health Engineering.

The position of Chairman of the British Columbia Examining Board for Sanitary Inspectors was again filled by the Director of the Division. Eleven candidates wrote the examinations in sanitary inspection in 1956.

Owing to the change in arrangements with respect to inspections of tourist accommodation there was less work required by this Division in 1956 on tourist-accommodation work. These inspections of tourist accommodation are now made in the field by the local health units without reference to the Division of Public Health Engineering, except in certain special cases. It is felt that this has been an improvement in administration resulting in less work for this Division.

The annual convention of the Pacific Northwest Section of the American Waterworks Association was held in Victoria in May, 1955. Many waterworks officials from British Columbia attended the convention. There were a number of excellent papers dealing with waterworks problems of special interest to people in British Columbia.

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 meetings of this committee were attended during the year.

As mentioned previously, the work of the Division was considerably hampered in 1956 due to shortage of staff. The continued expansion of the economy of the Province will lead to more and more public health engineering problems. The coming into operation of the Pollution-control Board will greatly expand the work of this Division. It is the intention of the Division to try to pick out the work having the most influence on public health for priority during 1957.

REPORT OF THE DIVISION OF VITAL STATISTICS

J. H. DOUGHTY, DIRECTOR

The Division of Vital Statistics performs two major functions in the Health Branch. It is responsible by statute for the 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 registration and certification responsibilities. It also compiles the formal vital statistics of the Province as derived from the registrations of birth, death, stillbirth, and marriage. The Division likewise offers to all other divisions of the Health Branch a complete statistical service, including mechanical processing, statistical analyses, and consultant service. In addition, it provides extensive statistical service to the British Columbia Mental Health Services, the British Columbia Cancer Institute, and to other associated health agencies.

The steady increase in the volume of services rendered, which has been noted in recent years, continued in 1956. Certificates issued approached the 68,000 mark, a 9-per-cent increase over the figure for 1955 and more than double the number issued in 1950. Birth certificates issued numbered over 50,000, an increase of 9 per cent from 1955. Marriage certificates issued increased by 9 per cent and death certificates by 1 per cent. Change of name certificates exceeded the 1955 figure by almost 50 per cent. It is again apparent that the demand for birth and marriage certificates is increasing at a considerably faster rate than the increase in population.

Revenue-producing searches of vital-statistics registrations increased by 3 per cent in 1956, while non-revenue searches increased by 7 per cent. Total revenue collected by the central office increased by 6 per cent.

The number of registrations received and filed totalled over 63,000 in 1956, a 2.4-per-cent increase over 1955.

In line with the increasing development of the northern area of the Province two new registration districts were created to provide better service to the people in that area. These new registration districts have been named Kitimat and Cassiar respectively.

In co-operation with the Division of Preventive Dentistry, the first community dental-health surveys were carried out during the year and statistical indices of dental health of the selected communities were compiled. This project marks one of the first uses of statistical sampling on a large scale for the production of public health statistics in this Province. The Division intends to explore other possible applications of sampling methods in the production of public health statistics.

The marked increase in the demand for laminated birth certificates during the last few years has caused the Division to investigate faster and more efficient methods of producing these certificates on a mass-production basis. The number of manual operations in the production of a laminated certificate is high in comparison with a paper certificate, and the cost of such a certificate is consequently greater, although the two types are sold to the public for the same price. The blank certificates are received from the printers in sheets of ten to a page and it was found that these certificates could be perforated during the printing process in such a way that the work of cutting and trimming, subsequent to typing, could be eliminated. In addition, it was found that the number of operations required in connection with trimming and cornering the finished laminated certificates could be greatly reduced through the purchase of a special die cutting-machine. This machine has been in operation for approximately nine months and has effected a valuable saving of clerical time.

REGISTRATION OF BIRTHS, DEATHS, AND MARRIAGES

Current Registrations

The Province continued to enjoy a high level of registration completeness during 1956 with very few delinquent registrations being reported. The problem of securing complete and accurate registration for all vital-statistics events continues to be a matter of patient effort and co-operation between the central office and the various District Registrars.

The current registration picture for 1956 followed the pattern of general increase which has been noted for the last number of years.

Although the responsibility for registering a birth rests with the parents concerned, it has long been the policy of the Division to assist the parents and to make them aware of their responsibility by mailing blank registration forms and instructions to the mother immediately upon receipt of the doctor's notification of the birth. During 1956 an improved method referred to as the " package system " of distributing birth registration forms, was introduced. A package is prepared consisting of the registration form, the instruction leaflet, a certificate application form, and an envelope addressed to the District Registrar of Births, Deaths, and Marriages. Each hospital is supplied with a stock of these packages and the hospitals undertake to hand the packages to the mothers while they are still in hospital. This new system appears to be working very well and has resulted in a considerable increase in the promptness with which registrations of birth are filed. The success of the scheme is in a large measure due to the excellent co-operation which the Division has received from the hospitals throughout the Province.

It has become apparent that it is no longer practicable to refuse to accept vital-statistics registrations completed with a ball-point pen. Furthermore, recent improvements in the quality of ball-point pens appear to have largely nullified the former objections to their use. For this reason, all District Registrars of Births, Deaths, and Marriages have been notified that registrations need not be rejected solely on the grounds that they were completed with ball-point pens.

Delayed Registration of Births

The volume of delayed registrations continued on approximately the same level as for 1955. There is some indication that the delayed-registration applications which are now being received relate to cases where clear cut evidence to support the application is not available. Because of this it has become necessary to make more use of unusual items of evidence and to build up the necessary standard of evidence from a number of fragmentary sources. The persistence of both the Delayed-registration Section and of certain applicants has led to the successful filing of delayed registrations in interesting and almost dramatic fashions. A recent example was the case of a 45-year-old person who had been born in a remote district of British Columbia. Shortly after birth she had moved to Eastern Canada and later to Eastern United States. Because the applicant had been taken from the Province at an early age, coupled with the fact that she was born in a remote rural area, there appeared little likelihood of obtaining any satisfactory documentary evidence to support the application. After a long and fruitless exchange of correspondence, the delayed-registration clerk linked the application with a delayed registration filed some time earlier, but relating to the same area of the Province. An examination of this file resulted in contact being established with an elderly person living in Victoria who was fully aware of the birth in question and was able to make a full and detailed statement, which established beyond any doubt the claim of the applicant. It is becoming increasingly clear that the balance of outstanding delayed-registration applications from older persons will tend to be based on miscellaneous items of evidence rather

than on documents of the Class "A" type, such as baptismal records and doctors' reports. Whether or not such evidence can be found will depend largely upon the ingenuity which applicants use in pursuing the required evidence.

The verification library which the Division has built up as a means of assisting applicants for delayed registrations has been referred to in earlier Reports. A valuable improvement in the reference material contained in this library was undertaken during the year with the editing and binding of many thousands of hospital returns covering the period from 1917 to the present day.

The new method of filing correspondence relating to delayed registration of birth applications, which was introduced in 1955, has proved to be very satisfactory and among other things has now made possible a count of the number of delayed-registration applications in hand. At the present time over 800 such applications are under active consideration.

DOCUMENTARY REVISION

Unlike most records, vital-statistics registrations are not static but are continually subject to amendment and notation as a result of adoptions, divorces, legal changes of name, legitimations of birth, and corrections. This phase of the Division's work has been termed " documentary revision," and is carried out by a group of specially trained persons, constituting the Documentary Revision Section. It is the responsibility of this Section to receive and file copies of all adoptions and divorces which are granted in the Supreme Court of this Province and to locate the original registration involved in order that the appropriate notation may be made upon it. If the divorce or adoption relates to a marriage or a birth which took place in another Province, the information is transmitted to that Province under a reciprocal agreement.

Another important duty undertaken by the Documentary Revision Section is the processing of legitimation of birth applications. Under the " Legitimation Act," a child is deemed to have been legitimate from birth once its natural parents have intermarried. The " Vital Statistics Act " provides that under such circumstances a new registration may be substituted for the registration originally filed, the new registration showing the child to be legitimate. However, before such applications may be accepted, satisfactory evidence of paternity must be obtained. The Division assists the applicants as far as possible in obtaining the necessary evidence. Hospital returns and physicians' notices of birth are searched to ascertain whether or not the putative father's name was stated at the time of birth. With the parents' consent, the Division will contact any welfare agency which might have information of value contained in its records. The Division works in close liaison with the Child Welfare Branch in matters affecting legitimation.

When the legitimation application has been approved, a new registration is prepared and placed on file. The original registration is removed from the registration volume and placed in a sealed file along with the correspondence relating to the application. The birth index is then amended to show the changed name of the child, the microfilm record is deleted and replaced by a photograph of the new registration, and the new registration is assigned the same registration number as the original.

Legitimations effected during 1956 totalled 207, a 2-per-cent increase over the previous year. Divorce orders totalled 1,620, a 6-per-cent increase from 1955, while adoption orders increased by 12 per cent to a total of 1,255.

LEGAL CHANGES OF NAME

Another major responsibility of the Division is the administration of the " Change of Name Act." The principal requirements for a legal change of name are that the applicant be 21 years of age or over, a British subject, and domiciled in this Province.

An application for change of name may cover more than one individual in a family. Thus, a married man need file only one application to cover a change of surname and (or) given names for himself, his wife, and any unmarried minor children in his family. An interesting feature of the Act is that the only person who is entitled to change the surname of a child is a married man, thus it is impossible for a widowed or divorced person, or for an unmarried mother to change the surname of a child.

Legal changes of name granted during 1956 totalled 449, a 6-per-cent increase over the previous year.

ADMINISTRATION OF THE "MARRIAGE ACT"

The administration of the "Marriage Act" also falls within the jurisdiction of the Division of Vital Statistics. This Act covers all phases of the Province's control over the solemnization of marriage and the legal preliminaries thereto. The main duties of the Division, under this Act, relate to the issuance of marriage licences and to the licensing of individual ministers and clergymen with the authority to solemnize marriage in British Columbia. Denominations which have not previously been recognized under the "Marriage Act" of this Province must meet certain requirements before their clergymen may be eligible for licensing under the "Marriage Act." The Division also appoints Marriage Commissions for the purpose of solemnizing the civil marriage ceremony in this Province. It is usual for this appointment to be vested in the District Registrar of Births, Deaths, and Marriages, although in a few areas of the Province additional civil Marriage Commissioner appointments have been made to meet local needs.

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

Four new religious groups were recognized under the "Marriage Act" during 1956, while inquiries as to the qualifications for recognition were made by six others. Twenty orders permitting remarriage, pursuant to section 47 of the "Marriage Act," were issued.

Persons having a reasonable objection to an intended marriage may lodge a caveat with any Marriage Commissioner or Issuer of Marriage Licences, whereupon no civil marriage may be performed nor any licence issued until the grounds for the objection have been investigated. Six caveats were lodged during the year and these were immediately made known to all Marriage Commissioners and Marriage Licence Issuers within the Province.

REGISTRATION OF NOTICES OF FILING OF A WILL

By an amendment to the "Wills Act," assented to in 1945, it became possible for testators to file with the Division of Vital Statistics a notice which records the location of the will and the date of filing. This service is gaining in popularity each year with an increasing volume of wills notices being filed. Over 5,200 notices were received during 1956, bringing the total now registered with the Division to approximately 33,000. The processing of these notices within the Division is demanding an increasing amount of clerical time, since each notice must be carefully filed and adequately indexed in order to be available for subsequent searching. There is no charge for the filing of a wills notice, although a statutory fee of 50 cents is required for a search of the records prior to the probate of a will. Searches of the wills notices may not be undertaken until the death of the testator has been proven to the satisfaction of the Division.

Although there was an increase in 1956 in the number of wills searches carried out, this increase was not in proportion to the increased number of new notifications received. The reason for this is that the wills searches are related to the death rate rather than to the number of notifications on file.

MICROFILM AND PHOTOGRAPHIC SERVICES

The Division continued to forward microfilm copies of all registrations of births, deaths, stillbirths, and marriages on a weekly basis to the Dominion Bureau of Statistics. This is a contract arrangement and enables the Dominion Bureau of Statistics to compile national vital statistics and the national indexes of births and deaths.

Whenever certified copies of any registration of a birth, death, or marriage are required, such certified copies are prepared in photo-copy form rather than by transcribing from the original registration as was formerly the practice. This method of issuing certified copies has proven to be the most satisfactory and has the singular advantage of eliminating the possibility of error in the preparation of the copies. It has also eliminated the need for intensive checking from the original to the copy.

Most photographic copies issued by the Division are prepared in reduced size from the corresponding microfilm image. However, the Division also has equipment capable of producing full-size copies of any documents for which the microfilm is not yet available. Hence, certified photographic copies may be issued of any document at any time following its receipt by the Division.

The microfilm camera continued to be used during the year as time permitted for the filming of files and documents other than vital-statistics registrations. These included delayed-registration declarations, divorce Court orders, and alteration of surname files. In addition, a large number of blue-prints were filmed on behalf of the Division of Public Health Engineering.

DISTRICT REGISTRARS' OFFICES

Changes in Registration Districts and District Offices

The increased industrial development in the northern part of the Province made it apparent that consideration should be given to expanding the vital-statistics registration facilities in that area. Accordingly, two new registration districts were established during the year; namely, the registration district of Kitimat and the registration district of Cassiar. These new registration districts were created by subdividing the existing districts of Prince Rupert and Telegraph Creek.

During the year it became necessary to transfer the vital-statistics duties at Campbell River from the Clerk of the Village of Campbell River to a private agency. The Village Clerk, having held the appointment of District Registrar for more than three years following the transfer of duties from the Royal Canadian Mounted Police, found that the duties of District Registrar interfered with his commitments with the Village Corporation and for this reason asked to be relieved of his appointment. The co-operation of The Corporation of the Village of Campbell River in allowing the Village Clerk to carry the vital statistics for these several years enabled uninterrupted service to the community and appreciation is expressed for the work done by the Village Clerk.

When the Deputy District Registrar's office at Keremeos was closed in 1951, it was deemed necessary to retain a Marriage Commissioner in that village. However, since that time very few civil marriages have been performed and the appointment of Marriage Commissioner at Keremeos has now been rescinded.

Early in the year the remuneration paid to those District Registrars operating on a commission basis was increased by Order in Council from 50 cents to 75 cents per registration. This adjustment was made to bring the payments to commission agents into line with the services they perform.

Inspections

The regular inspection programme of the Division was curtailed during 1956 in order to allow the Supervisor of Vital Statistics to serve on a special survey team reviewing administrative and recording procedures in local health units. Consequently, the Inspector of Vital Statistics was required to assume additional central office duties for the period of the survey.

Nevertheless, twenty-three offices and sub-offices covering Vancouver Island, the northern part of the Province extending from Prince Rupert to Prince George, the Peace River district and the Central Cariboo district, from Quesnel to Williams Lake, were visited during the year by the Inspector or the Supervisor.

The standard of work being performed by the District Registrars continued to be most satisfactory during the year and the Division is grateful for the co-operation of its local representatives throughout the Province.

At the close of the year there were ninety-one district offices and sub-offices operating in seventy-three registration districts. In addition, there was a Marine Registrar and seventeen Indian Superintendents serving ex officio as District Registrars of Births, Deaths, and Marriages for Indians. Forty-one of the district offices were located in Government Agencies or Sub-Agencies, while twenty-three were served by Royal Canadian Mounted Police personnel. Five offices were operated by other Government employees, while twenty-two offices were handled by private individuals on a commission basis.

Vancouver Office

The office of the District Registrar of Births, Deaths, and Marriages in Vancouver is operated by full-time employees of the Division. Because of the concentration of population in the Vancouver registration district, this office handles over 40 per cent of all registrations received in the Province.

The first full year of operation of the Vancouver office at its new location in the Provincial Health Building, at 828 West Tenth Avenue, showed very satisfactory results. The removal of the office from the centre of the city appears to have presented more advantages than disadvantages to the public being served.

STATISTICAL SERVICES

Further progress was made during 1956 in the development of the statistical services of the Division. Certain internal changes, designed to improve the organization of the Statistical Section and to formalize the working arrangements which have been developed were made during the year. A separate section known as the Research Section was set up with a Senior Research Assistant in charge. It is anticipated that this change will result in greater co-ordination of the statistical projects of the Division, and will increase the effectiveness of this phase of its activities.

The fact that the staff of the Research Section was not at full strength during the year, coupled with the work loss due to the training of new employees, somewhat limited the activities of the section. All new employees require a certain amount of orientation in their duties before they are able to contribute effectively, and this is particularly true in the field of public health statistics. The requirements of the work are unusual and there is at the present time a virtual absence of prospective employees with training in this field. For clerical workers, training is required so that they may become familiar with the medical terminology employed, with coding procedures, with the presentation of tabular material, and with certain other special features of the work. The professional employees require the same familiarization with the aforementioned features and, in addition, a considerable knowledge of the medical and statistical aspects of public health programmes.

The training of two new research assistants in the Victoria office was carried on during the year. All routine commitments were met and a number of special projects were undertaken.

Dental-health Statistics

Most notable among the new assignments undertaken during the year was the production of an extensive set of statistical indices relating to the level of dental health in three selected areas of the Province. The planning and organization of this project was outlined in last year's Annual Report. The examinations and recording by the dentists commenced in January of 1956. By the end of March all examinations had been completed and the individual dental records were forwarded to the Division for mechanical processing and the statistical analysis. The completed analysis of the first year's survey was published in the Special Reports series of the Division of Vital Statistics and is synopsized later in this Report.

This project has been planned on a continuing basis and all preparations, including the selection of the sample, for the 1957 survey were completed during the year. The 1956 indices established base-line data on dental-health status of children in the three areas mentioned, and will be used for comparison with indices of future years in evaluating the dental-health programmes in operation in the regions concerned. In addition, the indices give valuable information regarding the present status of dental health among school-children.

Tuberculosis Statistics

The Division continued to process the statistics of the Division of Tuberculosis Control, including data on new cases examined and on admissions and separations from tuberculosis sanataria. The annual indexes of known cases of tuberculosis and of certain non-tuberculous chest conditions were tabulated in both alphabetical and numerical sequences.

No changes were made in the record system of the Division of Tuberculosis Control during the year, but discussions and meetings were held respecting the development of a one file system for the medical records of the Division. Agreement was reached on the general form that the record would take, but implementation of the change was withheld, pending the recommendations of the Committee on Records and Statistics of the research project in studies on the Applied Epidemiology of Tuberculosis.

The Division was extensively represented on the records and statistics committee just mentioned and devoted a considerable amount of time to studying and evaluating certain changes which have been suggested by other members of the committee.

The Division also had a representative on the Planning Committee for the Provincial Tuberculosis Mobile Survey Unit. This representation has proven to be most advantageous, and the policy has now been adopted of arranging the programme for the mobile unit on the basis of special statistics prepared by the Division for this purpose. Assistance was given to the Division of Tuberculosis Control in a statistical analysis of studies pertaining to surgery cases. This analysis was required for the evaluation of the management of surgical cases in the Division.

Special analyses were carried out in connection with a planned community wide X-ray survey in the Oliver district. In addition, a number of special requests of the Division of Tuberculosis Control were met, including special tabulations of new cases and of known cases on Vancouver Island, special tabulations of reported cases involving pleurisy and special listings of new cases in Vancouver City.

The ordering of printed forms used in the Division of Tuberculosis Control continued to be carried out by this Division and no change in the established policy was made. However, consideration is being given to the transfer of this duty to the Division of Tuberculosis Control now that certain procedures have been developed and tested.

Special tabulations and listings respecting Indian tuberculosis cases were prepared for the benefit of the Indian health services.

Venereal-disease Statistics

Information relating to new notifications of venereal infection continued to be transmitted monthly to the Division by the Division of Venereal Disease Control in coded form. This information was processed mechanically and subjected to statistical analysis according to the patterns established in previous years. The Division participated in a number of small studies initiated by the Division of Venereal Disease Control and assisted in the planning and introduction of a special study on facilitation. The results of this study are expected to be available toward the end of 1957.

Crippled Children's Registry

Supervision of the non-medical aspects of the Crippled Children's Registry is a responsibility of this Division and occupies a major portion of the time of one research assistant. The change-over of cases from the old record system to the new system, which was outlined in last year's Report has been progressing during the year. This work was curtailed considerably, due to the shortage of staff in the Registry.

It has become apparent that in many instances several members of the same family are reported to the Registry. Consideration is therefore being given to setting up a special register of such families. This would facilitate the study of the familial aspects of impairment amongst children.

Considerable time was spent by the research assistant in supervising certain non-statistical functions of the Registry. These included assisting in the development of new agencies or clinics providing services for handicapped children, lecturing to organizations and to student groups respecting the work of the Registry, and attending many meetings of allied organizations, such as the various divisions of the Community Chest and Council of Greater Vancouver.

At the invitation of the Canadian Council of Crippled Children and Adults, the research assistant assigned to the Registry addressed the annual meeting of the executive of that organization, outlining the organization, development, and functions of the British Columbia Crippled Children's Registry.

Mental-health Statistics

The Division continued to process the admission and separation reports of patients moving in and out of institutions of the Mental Health Services. The extensive statistical tabulations required for the Annual Report of the Mental Health Services were again prepared and certain changes designed to improve the effectiveness of the statistics were made in consultation with the Director of Mental Health Services.

The statistical records on the resident population of the Provincial Mental Hospital at Essondale were completed early in the year and the records for Woodlands School will be completed in the near future. These statistical records are maintained on punch-cards and are available for tabulation and analysis. Consultant service was extended in the planning of the records and statistics required for the new Day Centre to be opened on January 1st, 1957. Discussions are also being held in connection with the planning of treatment-cards for Woodlands School and from these treatment-cards cohort statistics will be developed.

A special analysis was prepared for the Mental Health Services Annual Report. This analysis dealt with the length of stay in the Provincial Mental Hospital of schizophrenic patients in the period prior to the present treatment programme, compared to the situation at the present time. The hypothesis that treatment has relieved the accumulation of

schizophrenic patients in the mental hospitals was proven. Furthermore, it was demonstrated that schizophrenic patients still present a serious problem in the planning of future accommodation facilities in the Mental Health Services.

Cancer Statistics

The British Columbia Cancer Institute continued to abstract statistical data from its case load and to forward this information to the Division of Vital Statistics in coded form for mechanical tabulation. The processing of the backlog records in the British Columbia Cancer Institute is expected to be concluded during 1957, at which time all of the relevant medical records of the Institute will be available in punch-card form for tabulation and statistical analysis.

During the year several special tabulations were prepared from the statistical punch-cards which have already been processed. These tabulations were required for special studies in the British Columbia Cancer Institute and for the statistical report of annual admissions to the Institute.

The Division continued to operate the Province-wide cancer reporting system and to prepare statistics on the reported incidence of malignancies in British Columbia. These statistics were summarized in a special report published in the series "Division of Vital Statistics Special Reports."

Western Rehabilitation Centre Statistics

The Division rendered assistance to the Western Rehabilitation Centre in the designing of a statistical system which would yield information required for administrative purposes and for programme evaluation. This is a relatively new field of statistical activity and it was necessary to devise a new pattern of statistics and statistical procedures to meet the peculiarities of rehabilitation work. It is anticipated that the new system may become operative early in 1957. The Division of Vital Statistics has undertaken to use its mechanical equipment to process the statistical records of the Rehabilitation Centre and to assist in the anlysis of the statistics which will be produced.

Infant and Maternal Morbidity and Mortality Statistics

In previous Annual Reports the special infant-mortality studies of the Division, which are based on data abstracted from birth registrations, death registrations, and physicians' notices of birth, have been described. In order to ensure a maximum utilization of the statistical resources available in this connection a special committee was established with representation from the Department of Pædiatrics, the Department of Obstetrics, and the Department of Public Health of the University of British Columbia, as well as from the Division of Vital Statistics. This committee met several times during the latter months of the year and planned a programme of statistical releases which it is hoped will be of interest and value not only to the Health Branch and to the Departments of the University mentioned, but also to the practising physicians throughout the Province.

A special study of neo-natal mortality in British Columbia was made during the year and was presented at the annual meeting of the Canadian Public Health Association. Several aspects of neo-natal mortality not previously measured or assessed in this Province were brought out in the study.

The Division was also represented on the committee which has been planning a comprehensive study of obstetrical cases and newborns in Vancouver General Hospital. The privilege of participating in this study is greatly appreciated since it makes possible certain correlations with other statistical data being prepared by the Division.

Child Growth and Development Charts

At the request of the Director of the Central Vancouver Island Health Unit a number of sources of height-weight data for children were investigated to determine their suitability in developing a simplified height and weight chart. Such a chart would be used in the school health programme as a screening device.

It was found that no sufficiently large body of data of the type required for this purpose was readily available and it was therefore decided that the information would be obtained by compilations based on the height and weight records of the children in the Central Vancouver Island Health Unit. It was estimated that these records contain approximately 100,000 individual height and weight measurements and would constitute a most satisfactory basis for the height-weight charts. A programme of abstracting the health records of the Central Vancouver Island Health Unit to obtain these data was developed, based on the use of mechanical tabulation equipment in the Division. By the end of the year approximately 50 per cent of the records had been processed and it is anticipated that the project will be concluded early in 1957.

Epidemiological Statistics

The recording and statistical aspects of the Province-wide notifiable-disease reporting system constitute another responsibility of the Division. The routines established in connection with this statistical system are such that weekly totals by disease and by health units are available on the Friday following the week of reporting. During periods of increased incidence of poliomyelitis, an up-to-the-minute record is maintained in the central office based upon telegraphic reporting.

The Division assisted in the planning of the poliomyelitis vaccination programme by deriving estimates of the number of children by age-groups and health units.

An analysis of Salmonella infections was made during the year as a result of a significant increase in the number of cases reported.

The new typhoid fever carrier registry referred to in last year's Report was finalized and made operative during the year.

Periodic listings of deaths from staphylococcus infections were prepared during the year and made available to the special committee appointed to study the extent of this infection throughout the Province.

Periodic listings of deaths from poisonings were made available to the Director of the Division of Environmental Management. These lists are used in determining the extent and nature of poisoning fatalities occurring in the Province.

Morbidity Statistics

Morbidity statistics were compiled from the claims records of the British Columbia Government Employees' Medical Services. These statistics were released in the Special Reports series of the Division, and are described under that heading. A number of special analyses respecting utilization of the medical services were prepared for the executive board of the organization.

Other Assignments

The annual Medical Inspection of Schools Reports, covering all schools in the Province, were again processed by the Division and the required analyses prepared.

Assistance was given to the Director of the Division of Public Health Nursing in the analysis of the public health nurses time study and in the compilation of statistics respecting the several home-care programmes in operation in the Province.

Statistical inquiries from the public and from commercial firms were handled by the Research Section.

Procedure Manuals

With the expanding scope of the statistical work of the Division and the increasing variety of projects undertaken, it was considered necessary to develop procedure manuals for each of the important statistical assignments carried. Several additions were made to this set of manuals during the year and a number of existing manuals were revised.

Vital Statistics Special Reports

Seven reports were issued in the Vital Statistics Special Reports series during 1956. The purpose of these publications is to provide a medium for the presentation of statistical data not appearing elsewhere, which is considered to be of sufficient interest to public health personnel in this Province and to others to make its release in this form worthwhile. The following is a synopsis of the material contained in the reports issued during 1956:—

Report No. 13 was entitled "Statistics on Malignant Neoplasms in British Columbia, 1955." It contained data on cancer cases as reported through the cancer registration system and also on cancer deaths as registered with the Division of Vital Statistics.

Report No. 14, entitled "Accidents in British Columbia," presented two addresses given at the Public Health Institute by members of the Research Section of the Division. The first paper outlined various measures of the accidental-death problem in British Columbia. The second paper discussed some of the circumstances surrounding accidental deaths in the Province, and included a discussion of the main causes according to age-group and place of occurrence.

Report No. 15, entitled "Morbidity Statistics of the British Columbia Government Employees' Medical Services, December, 1954, to November, 1955," gave data on the incidence and cost of illness for conditions for which the members of the Medical Services received professional advice during the period indicated. The rate of illness in the scheme was found to be 1,134 per 1,000 males and 1,400 per 1,000 females. Services utilized for each 1,000 males numbered 3,341, and for each 1,000 females, 4,316. Cost per person was $17.30 for males and $25.41 for females.

Amongst males, injuries, respiratory infections, and conditions in the category diseases of the skin, diseases of the skeletal system, and congenital malformations were the leading causes of illness, accounting for over 50 per cent of the total. For females, respiratory conditions, diseases of the genital urinary tract, and conditions in the category diseases of the skin, diseases of the skeletal system, and congenital malformations were the leading causes, resulting in over 40 per cent of the total.

Report No. 16 was entitled "Health Unit Statistics, British Columbia, 1955." It was the fifth in a series presenting certain vital-statistics data on an annual basis for the various health units of the Province.

Report No. 17, entitled "British Columbia Dental Health Survey, 1956, Part I, Procedure with Special Reference to Sampling Methods," contained a description of the procedure and sampling methods used in the selection of samples for the 1956 Dental Health Survey.

Report No. 18 was entitled "British Columbia Dental Health Survey, 1956, Part II, Dental Health Indices for Greater Victoria, Greater Vancouver, and the Fraser Valley." It set forth the results of the survey which was carried out amongst school-children in the selected areas of the Province. The results were presented separately for each region and also for the combined regions, and were cross-classified by age. The analyses revealed significant differences in the dental-health indices for each region, although the pattern by age was similar in each area, exhibiting a gradual decline in dental health from the younger to the older ages.

Report No. 19 was entitled "Health Unit Statistics, British Columbia, 1948–51 and 1952–1955." This report was similar in format to the special reports on health-unit

statistics previously issued, except that it gave average rates for the two four-year periods mentioned. Frequencies and rates based on the experience of a number of consecutive years are less subject to chance variations and therefore serve as a more reliable index of the situation existing in each health unit.

SUMMARY OF 1956 VITAL STATISTICS

Preliminary figures indicated that the birth rate continued at a high level in the Province during 1956. The rate recorded was 25.8 live births per 1,000 population. The preliminary death rate stood at 9.8 deaths per 1,000 population, only slightly changed from the previous year's figure. The excess of births over deaths, referred to as the natural increase, amounted to about 22,400, or a rate of 16.0 per 1,000 population. For stillbirths a rate of 11.5 per 1,000 live births was recorded.

Principal Causes of Mortality

Preliminary figures indicate that there was a fairly substantial reduction in the mortality rate from the two leading causes of death, namely, diseases of the heart and cancer. The death rate amongst the non-Indian population attributed to diseases of the heart dropped from the 1955 figures of 379.6 per 100,000 population to 359.3 per 100,000 population in 1956. The death rate ascribed to cancer dropped from 163.7 per 100,000 population to 153.2.

Little change occurred in the death rate from the third leading cause of death, namely, vascular lesions of the central nervous system. The death rate from this cause stood at 106.3 per 100,000 population.

The three causes mentioned above accounted for approximately two-thirds of all deaths in the Province, and these deaths occurred mainly at the older ages. However, the fourth leading cause of death, namely, accidents, continued to take its toll at all ages, and constituted the leading cause of death between 1 and 39 years of age. The death rate due to accidents increased considerably during 1956 to 76.0 deaths per 100,000 population, compared to only 61.4 in 1955. Over one-quarter of this mortality was due to motor-vehicle accidents, while 18 per cent resulted from falls, and 9 per cent from drowning.

Deaths due to pneumonia were approximately 20 per cent greater than in the previous year, the death rate being 40.5 per 100,000 population. This was the highest death rate recorded from pneumonia since 1943.

Diseases of the arteries accounted for 21.0 deaths per 100,000 population and suicides for 12.3 per 100,000 population. The suicide death rate was slightly above that for 1955, but among the lowest for many years.

The infant death rate in the population, excluding Indians, was 22.5 per 1,000 live births, compared to 21.6 in 1955. The maternal death rate was unchanged at 0.4 deaths per 1,000 live births. Throughout the whole Province only fifteen deaths were ascribed to maternal causes in the non-Indian population.

REPORT OF THE DIVISION OF PUBLIC HEALTH EDUCATION

R. H. GOODACRE, DIRECTOR

This Division has been active during the year in revising the programme in order to shift the focus of effort from the craft aspects of public health education to the professional approach, utilizing the concepts and methods of the behavioural sciences as well as the natural and biological sciences. This appears to be a logical move, since public health deals primarily with people.

REVISED PROGRAMME

The first and most important of the three bases of the present programme is that of applying the behavioural sciences to public health education by assessing the educational value of current public health programmes in order that the content and approach of public health education may be reconciled with the basic principles of learning as they apply to a community composed of people whose attitudes and behaviour toward personal and community health vary widely. This analysis is directed toward public health activity in the three broad areas of child and maternal health, school health, and community health, in order to determine whether the activities are indeed educational.

It is felt that of the methods of providing public health education consultation and direction to personnel within the official public health agencies of this Province, the most efficient and economical is that of staff education. Staff education or in-service training is a major and vital function of public health practice. At the present time, Health Branch consultants and divisional directors are indeed engaged in staff education of their counterparts in local health units throughout the Province. However, training needs must be constantly re-evaluated and the training programme revised to meet these needs if maximum results are to be obtained. In order to maintain continuous supervision over the variety of training programmes within a health department, a new unit is being developed in an increasing number of health departments, particularly in the United States, to co-ordinate the training programme. Only a small full-time staff is apparently required to administer the co-ordination of training programmes, as the actual conduct of the training itself must be considered a function of the public health workers who are in supervisory positions. Although some state health departments maintain both a Division of Public Health Education and a Division of Training, the British Columbia Health Branch does not require within its organization both divisions at the present time, although it does require the type of service provided by both. Therefore, it is felt that the present Division of Public Health Education is in a logical position to develop and co-ordinate an over-all systematic programme of staff education, integrating within it public health education services in addition to those provided by other Health Branch consultants.

The third main function of the Division is that of administration of facilities for the provision of educational aids for use in local health-unit programmes for staff education and public health education. These facilities include the Health Branch library of books, professional journals, and other reference material; an extensive film and filmstrip library; and supplies of posters and pamphlets.

The aforementioned constitutes, in general, the revised programme of the Division. However, to date, implementation of this programme has been completely out of the question, since it has been necessary to devote a great deal of professional time to duties which are both clerical and semi-skilled in nature. The clerical duties have been undertaken by public health educators, because of unfortunate sickness experiences with clerical workers in the Division.

Three steps must be taken before members of this Division can be in a position to provide a true public health education service. The first of these pertains to the improvement of procedures and systems concerning the administration of the clerical and crafts

functions of the Division of Public Health Education, namely, the library, the library of films and filmstrips, and the pamphlet and poster supplies. It is encouraging to note that approximately 75 per cent of these procedures are now working quite smoothly. Secondly, it is necessary to obtain sufficient and competent clerical assistance on a continuous basis, which will eliminate the clerical functions now assumed by public health educators. Thirdly, it is imperative that the emphasis in the crafts of public health education be shifted from the professional public health educators to a semi-professional or technical type of person who is equally as capable of editing and writing publications as public health educators. It is encouraging to note that authority has now been given to enable the hiring of one person to undertake the supervisory aspects of the Division's clerical procedures and to assume the responsibilities for the crafts operations of the Division, heretofore undertaken by health educators.

FEDERAL-PROVINCIAL CONFERENCE

The Department of National Health and Welfare convened the Sixth Federal-Provincial Conference on Health Education in Ottawa, October 10th and 11th. Called every two years, these meetings serve to bring together representatives in health education from all ten Provinces and from the Federal Government's counterpart, Information Services Division. Following this two-day meeting, the Director spent a productive week with the Departments of Sociology and Public Health at Yale University, and at the Office of Public Health Education of the New York State Health Department. It was quite evident from the above-mentioned conference and visits to Yale and Albany, that this Province is not alone in being faced with problems with respect to public health education.

STAFF EDUCATION

Each year this Division organizes, for 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 Hotel Georgia in Vancouver and was addressed by the guest speaker, Dr. Charles Smith, Dean of the University of California's School of Public Health. Completing the agenda, very capable speakers were obtained to present talks or discussions on such topics as public health law, accident prevention, stress, and mental retardation, to mention a few, and similar topics designed to keep staff informed on current trends and advances in public health.

In keeping with the concept that the Division of Public Health Education should be concerned with the co-ordination of a staff-education programme, the Director co-operated with the Chief Sanitary Inspector in preparing a course for selected sanitary inspectors, which would provide them with the theory of plumbing. This two-week short course, made possible through the availability of National health grant funds, was given by P. Ballam, formerly Plumbing Inspector with the City of Victoria.

During the year the inclusion of prenatal classes within the local health-unit programmes gained ground. Forty-one areas in the Province are now giving, or planning for, a series of classes for expectant mothers. The Division continued to select, in conjunction with the Division of Public Health Nursing, reference texts and audio-visual aids for the conduct of these classes, and was able to provide a majority of these items from the Maternal and Child Health Grant.

Local agencies sponsoring community preventive dental clinics have been encouraged to provide not only a dental-treatment programme but also a dental-health education programme conjointly. With this in mind, plans were begun toward the beginning of the year to provide to these sponsoring agencies, and to local health services, an outline providing a basic plan for dental-health education within the community. This

outline considered those people and groups within the community who have the opportunity to undertake dental-health education; for example, the practising dentist, the physician, and the school-teacher. This outline was also prepared to include suggested educational content for each group concerned. Unfortunately, this outline remains incompleted and will probably remain so until such time as the clerical situation within the Division has been improved.

For a number of years it has been recognized that the Health Branch library in Victoria, the library in the Provincial Health Building in Vancouver, and the health-unit libraries are utilizing inadequate systems of cataloguing and subject headings. Negotiations with the Provincial Librarian have resulted in the seconding of a reference librarian, employed by the Provincial Library, to the Health Branch for the purpose of completely reorganizing the library facilities. This is a most encouraging development and will result in better and more efficient utilization of the library facilities which have been established for the benefit of public health personnel, both on the Provincial and local level. The revision of the Health Branch library in Victoria will, in time, be extended to the holdings of the Vancouver divisions and ultimately to the small basic libraries maintained in every health-unit main and branch office in the Province.

EDUCATION OF THE PUBLIC

The Report for 1955 mentioned that a film was prepared depicting the role of the Poliomyelitis Pavilion in the total picture of the care and management of poliomyelitis patients in this Province. This film, produced initially for showing at the official opening of the pavilion in June, 1955, was subsequently revised in order to demonstrate the role of an acute general hospital, the Poliomyelitis Pavilion, and the Western Rehabilitation Centre, ending with a sequence centring around polio vaccine as a hopeful preventative. The approach to the film was formulated by the Division after discussion with the Deputy Minister of Health. The services of the Photographic Branch of the Department of Trade and Industry were made available by the Deputy Minister of that Department. Because of the shortage of polio vaccine encountered during the summer months, release of the film which is entitled " The Road Home " was delayed until October, at which time local health units were advised of the availability of this new production. The film has already been shown in the Provinces of Saskatchewan and Quebec and was also reviewed by representatives at the Federal-Provincial Conference on Health Education, where it was received with great favour.

Various publications and posters were produced during the year in co-operation with the Divisions of Public Health Nursing, Environmental Management, and Preventive Dentistry. Reference to these items will be found elsewhere in the Health Branch Annual Report.

In addition, the Department of Education was approached to ascertain whether there would be merit in the preparation of a manual on public health services, which would benefit teachers in training and those now teaching health in the schools throughout the Province. This suggested manual was received with some enthusiasm by the Department of Education and an outline of the content was subsequently prepared and approved in principle by the Assistant Deputy Minister of Education. However, for the same reasons outlined previously, progress in the preparation of this manual has ceased temporarily.

In 1954 the Government completed plans designed to allow each department to include a display of its services at the British Columbia Building, located on the Pacific National Exhibition grounds in Vancouver. In conjunction with a Vancouver display firm, the Division developed an exhibit illustrating the many preventive health services that are organized on a health-unit basis for mothers, school-children, and the community in general. Annually, improvements are made in this display, to the point where, during

Pacific National Exhibition week, it competes quite favourably with other Government displays. However, the main purpose of the display is fulfilled not during this week but throughout the year, when groups of visitors are conducted through the British Columbia Building and therefore have a better opportunity to absorb the contents of each exhibit.

In August, 1953, the Health Branch Bulletin "B.C.'s Health" was discontinued in accordance with Government policy. Since that time the Health Branch has been contributing monthly articles for the new Government publication, "British Columbia Government News," which replaced all publications previously issued by the various departments. During the current year single issues have been devoted to the activities of one department. The Health Branch had the opportunity of submitting articles and pictures illustrating the work of health services, both Provincial and local, in the October issue of this publication. Practically the entire issue was written by a public health educator in this Division. Under the revised programme, this type of function will be transferred from the professional public health educator to the new semi-professional position which is in the process of becoming established.

PERSONNEL

This section of the Report has for the past few years reflected a note of pessimism. Nothing has occurred during the current year to result in any change. In fact, there is now one less public health educator in this Province, namely D. K. MacDonald, who resigned from the Victoria-Esquimalt Health Department where he was also serving the Saanich and South Vancouver Island Health Unit on a part-time basis, to enter the University of British Columbia's Faculty of Medicine as a student. There remain at the present time three trained public health educators engaged in public health in British Columbia, two employed with the Provincial Health Branch and one with the Greater Vancouver Metropolitan Health Committee.

It appears that the general staff situation within the Division will be alleviated shortly with the employment of a semi-professional worker to undertake duties as outlined earlier in this Report. The Division will then consist of one clerical worker dealing with the library and with pamphlet supplies; one clerical worker concentrating her efforts on film bookings; a semi-professional worker supervising the facilities and, in addition, assuming the writing and editing activities of the Division, and two public health educators, one of whom is the Director. With this combination there is every reason to believe that the Division's programme can be extended.

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

G. R. F. ELLIOT, ASSISTANT PROVINCIAL HEALTH OFFICER

The Bureau of Special Preventive and Treatment Services includes the Divisions of Laboratories, Tuberculosis Control, and Venereal Disease Control. The Assistant Provincial Health Officer, who directs this Bureau, is primarily concerned with matters of policy respecting these Divisions, including co-ordination between these Divisions and the voluntary health agencies, as well as between them and the local health services.

This Bureau also has the responsibility of working with and co-ordinating the responsibilities of certain voluntary health agencies who have a close relationship with the work of the Health Branch. These agencies include the Alcoholism Foundation of British Columbia; British Columbia Cancer Foundation; Canadian Cancer Society; Canadian Arthritis and Rheumatism Society, British Columbia Division; the Narcotics Addiction Foundation of British Columbia; Western Rehabilitation Centre (formerly Western Society for Rehabilitation); British Columbia Poliomyelitis Foundation, and the Canadian Red Cross Society, British Columbia Division.

A consultant in public health nursing seconded to the Vancouver area by the Bureau of Local Health Services is located in the Provincial Health Building, where the Assistant Provincial Health Officer has his offices. Also located in this building is the Vancouver Section of the Division of Vital Statistics, which includes representatives of the Statistical Section of this Division. The policy of having these representatives of the Division of Vital Statistics located in this building continues to prove more valuable each year. The offices of the Co-ordinator of Rehabilitation and the Medical Consultant in Rehabilitation are also located in this building.

The Provincial Health Building, at 828 West Tenth Avenue, Vancouver, which was opened in 1955, has enabled the various Divisions within the Bureau to operate much more efficiently, not only in improved services to the people but also in co-ordination between this Bureau and local health services.

ADMINISTRATION

During the year, due to changes in personnel, substantial reorganization of administration was necessary. The sudden death of Miss Jean Gilley, research assistant, in October, was a tremendous loss not only to this Bureau but also to the entire Health Branch. Miss Gilley had been with the Provincial Government Service for twenty-two years and had made many notable contributions to the public service of this Province.

Within the Division of Laboratories, 1956 was marked by the resignation of the Director and Assistant Director. The Director, who had held the position of part-time Director for twenty-one years, resigned in September to assume full-time employment at the University of British Columbia. The Assistant Director, who had been with the Division of Laboratories for twenty-five years, resigned in April, 1956. The loss of these two senior and most capable employees was a serious one, particularly at the time that the Division of Laboratories had moved into more spacious and satisfactory facilities and is in the process of expanding laboratory services. A full-time medical specialist joined the Division of Laboratories in early 1956, and has been appointed Acting Director. The Technical Supervisor of Clinical Laboratory Services, on the staff of the Bureau headquarters, assumed part-time responsibilities in the Division of Laboratories as Assistant Director, in addition to continuing his duties relative to the Laboratory and Radiological Services Grant. These additional responsibilities of the Technical Supervisor and the fact the new Acting Director of Laboratories is experienced in clinical laboratory services will more closely co-ordinate clinical laboratory and public health laboratory services within this Province.

The recruitment of technical personnel within the Division of Laboratories continues to be difficult, but it would appear this problem is diminishing somewhat, perhaps due to more satisfactory quarters which the Division of Laboratories now occupy. The passage of the "Milk Industry Act" has brought additional demands upon the Division of Laboratories, but it is hoped these additional demands will be met entirely in the near future.

The programme of the Division of Tuberculosis Control continues to be subject to continuous, critical review. It has also been possible to continue the reduction in the budget of the Division of Tuberculosis Control as the problem of tuberculosis gradually lessens.

Plans have been made whereby the beds operated by the Division of Tuberculosis Control in Victoria will cease to operate as tuberculosis beds by March 31st, 1957. It has also been possible to make further reductions in the beds being operated at Tranquille Sanatorium.

The Division of Venereal Disease Control continues to consolidate the gains it has made in the past few years in venereal-disease control. This Division operates with a minimum of difficulties and is most efficient.

In both the Divisions of Venereal Disease Control and Tuberculosis Control continuous studies are being carried out on the epidemiology of the specific disease. It is only by such methods that progress will be made toward the eventual eradication of these diseases. A particularly interesting study is under way regarding the epidemiology of tuberculosis. This study is being financed by the British Columbia Tuberculosis Society and over-all direction has been assumed by the Associate Professor of Public Health, Faculty of Medicine, University of British Columbia, in close co-operation with the Consultant Epidemiologist, the Division of Vital Statistics, and the Division of Tuberculosis Control.

The close relationship with the Bureau of Local Health Services continues as in previous years. This relationship has been strengthened as the Committee on Tuberculosis Practices and the Committee on Communicable Disease Control continue to meet and determine policy. The Bureau of Special Preventive and Treatment Services continues to assume the co-ordination of all agencies concerned with the care of poliomyelitis patients, as well as the distribution of the Salk vaccine and gamma globulin used by the local health services. The presence of the consultant in public health nursing in this Bureau, on attachment from the Bureau of Local Health Services, has done much to co-ordinate and interpret the responsibilities of this Bureau, its divisions, and the voluntary health agencies to local health services.

FACULTY OF MEDICINE, UNIVERSITY OF BRITISH COLUMBIA

Continuous close co-operation is maintained with the Dean of Medicine and the various departments. Relationship with the Department of Pædiatrics and the Department of Preventive Medicine is particularly close. Of great value was a one-week refresher course organized by the Department of Preventive Medicine for health officers planning to write their examination for certification as specialists in the fall of 1956. The Department of Pædiatrics, as the official consultant to the Health Branch in child care, continues to be a most valuable adjunct to the services of the Health Branch.

VOLUNTARY HEALTH AGENCIES

The responsibility of this Bureau in interpreting the policy of the Health Branch to voluntary health agencies continues to grow. The services of the voluntary health agencies are many and varied, but their aims and objectives must be co-ordinated with the plans and policy of the Health Branch if possible. It has been the responsibility of this Bureau to endeavour to carry this out.

Only a few of the voluntary health agencies receive direct financial assistance from the Province of British Columbia and, in particular, the Health Branch. Some of the voluntary health agencies can be considered as agents of the Government, since they have assumed major responsibility for certain programmes. It is not possible to discuss the work of all voluntary health agencies in this Report; rather only brief reports will be given relative to those which receive financial assistance from the Government.

Alcoholism Foundation of British Columbia

This agency, incorporated under the " Societies Act " in 1953, has continued to make notable progress in the development of treatment and rehabilitation facilities for those suffering from alcoholism and to promote research and education concerning alcohol and its use. In December, 1955, limited residence facilities were opened in the proximity of the Foundation's clinical services which, during the past year, have proven a valuable adjunct in the treatment and rehabilitation of patients. A limited research project was undertaken by the Foundation during the year, in co-operation with the University of British Columbia.

The board of directors of the Foundation includes one representative from the Department of the Attorney-General; one from the Mental Health Services, Department of the Provincial Secretary; and one each from the Health and Welfare Branches of the Department of Health and Welfare.

British Columbia Cancer Foundation

The British Columbia Cancer Foundation was designated by the Provincial Government in 1949 to be the recognized agent for the treatment and diagnosis of cancer in the Province. Operating expenses are provided by the Cancer Control Grant of the National health grants, which is matched by a Provincial Government grant, and from private patients' fees.

The foundation operates the British Columbia Cancer Institute located in Vancouver, to which is attached a thirty-six bed boarding home. Complete diagnostic and treatment facilities are available to the people of British Columbia at this centre. In addition, a cancer clinic is located at the Royal Jubilee Hospital in Victoria, where treatment facilities are provided. Consultative cancer services have been established at various centres throughout the Province in co-operation with the local health services of the Health Branch, Department of Health and Welfare. The purpose of these services is to assist in the diagnosis of patients referred by the medical profession, to make recommendations in respect of treatment, and to provide follow-up services for those patients who have had treatment at the British Columbia Cancer Institute or the Victoria Cancer Clinic. Radiotherapists from the Institute make regular visits to each centre throughout the year.

British Columbia Medical Research Institute

The British Columbia Medical Research Institute is a non-profit organization which was incorporated in 1948 under the " Societies Act." It was conceived by a group of Vancouver citizens who sought as their objective the establishment of a major medical centre in the vicinity of the Vancouver General Hospital where essential facilities for medical research could be provided. The Institute operates in close co-operation with the medical profession in the Province, the Vancouver General Hospital, the University of British Columbia, and other organizations interested in this field of basic medical research.

Financial assistance has been made available to this Institute through the support of research projects from funds of the National health grants. In addition, in April, 1956, a further grant was made available to this organization by the Provincial Government.

Canadian Arthritis and Rheumatism Society (British Columbia Division)

The physiotherapy, medical consultant, and other special services offered by this Society were extended to the Prince Rupert, Terrace, Princeton, Lytton, and Grand Forks areas of the Province during the year. Thus, a network of Canadian Arthritis and Rheumatism Society services is available, at the request of the family physician, for patients with rheumatic disease, in all parts of British Columbia except in Golden, Dawson Creek, Burns Lake, and Williams Lake areas.

A most significant development in the work of this organization during the year has been the integration of all departments and facets of the work to provide, as far as personnel and financial resources permit, the complete teamwork approach to rehabilitation.

In the field of education, an annual medical lectureship in the rheumatic diseases is being financed by this Society at the University of British Columbia. Members of the Society's Medical Advisory Board lecture regularly to medical students and nurses at the University. Orientation courses are given regularly and a lecture series for general practitioners was given in November of this year. All these resulted in increased interest in and understanding of the care of the rheumatic patient by doctors and nurses throughout the Province. Short postgraduate courses have been provided for several staff members and the Medical Director and Physiotherapy Supervisor have given papers on the work of the Society in New York and in Eastern Canada.

Members of the medical profession of Vernon, Victoria, and Nanaimo participated in public forums on arthritis during the year.

Over three thousand patients in the Province received treatment during 1956. Problem cases have continued to be referred to the travelling medical consultants who have visited each unit outside Vancouver and Victoria twice during the year. Special cases are sent as in-patients to the Vancouver Medical Centre where they receive physiotherapy, occupational therapy, social casework, and nursing procedures and, where necessary, vocational training. Ten beds, sponsored by the Canadian Arthritis and Rheumtism Society, are reserved at the Western Rehabilitation Centre for this purpose and, in addition, six are usually occupied by patients needing longer periods of care at the Holy Family Hospital, Vancouver.

Late in 1955, the Arts and Crafts Department was opened at Provincial headquarters and the value of this additional service has been well established during the past year. Its purpose is to provide psychological stimulus by the satisfaction derived from creative effort, to bridge the gap between convalescence and the return to normal living, and to provide a source of income.

Research projects reported previously are being continued. A report on the serological project is being published.

Narcotics Addiction Foundation of British Columbia

The most recent voluntary health agency to be formed in this Province is the Narcotics Addiction Foundation of British Columbia. It was formed in September, 1955, for the purposes of developing programmes of treatment and rehabilitation of narcotic-drug addicts, to stimulate research into the problems of narcotic-drug addiction, and to promote community education regarding this problem. The Foundation is supported by a financial grant from the Provincial Government. The Board of Directors of the Foundation includes the following representation from the Provincial Government services: One from the Department of the Attorney-General; one from the Health Branch, Department of Health and Welfare; one from the Welfare Branch, Department of Health and Welfare; and one from the Mental Health Services of the Department of the Provincial Secretary.

In January, 1956, an executive director was appointed and shortly thereafter the services of a social worker and office secretary were added. Development of the Foundation's programmes during the year has been limited, because of problems encountered in acquiring suitable accommodation.

Many public-spirited citizens who have given so freely of their time and energy to the development of this Foundation are to be commended. Their continued support of the Foundation ensures the success of this organization in future years.

Western Rehabilitation Centre

It should be noted that the name of this organization has been recently changed from Western Society for Rehabilitation to Western Rehabilitation Centre. However, the purpose of the organization to provide a comprehensive rehabilitation programme in the medical, psychological, social, and vocational areas remains unchanged. Rehabilitation services are provided on an in-patient and out-patient basis under full-time medical supervision. Fifty-three beds are available for in-patient care. Twenty of these beds are nursing beds staffed with graduate nurses and experienced orderlies.

During the year the occupational therapy department has been substantially expanded, both with respect to staff and facilities. Added to this department is a woodworking room, a ceramics room, and a completely equipped training kitchen to assist in the rehabilitation of disabled homemakers.

Plans are being developed to institute, early in 1957, a broad statistical system. Statistical data will be used both for reporting on the work being done in the Centre and for programme evaluation. Future plans for 1957 also include provision for the engaging of a vocational placement officer and the addition of a second speech therapist.

The general picture for the current year has been one of increased activity. Residential patient-days in the first nine months of this year have increased 40 per cent over the corresponding period last year. This substantial increase has resulted primarily from the inauguration of the nursing service in October, 1955. Work units (one-half day of service per person) have increased 22 per cent over last year.

Canadian Red Cross Blood Transfusion Service

Reference was made in last year's Report to the fact that the Red Cross Blood Transfusion Service moved to quarters made available in the Provincial Health Building during September, 1955. This move represented the realization of an agreement between the Canadian Red Cross Society and the Government of the Province of British Columbia whereby the Society undertook to provide the Blood Transfusion Service without charge to the people of British Columbia, and the Government undertook provision of the necessary accommodation without charge to the Society. Previously, the Government had made a grant to this Society in lieu of provision of accommodation, pending completion of the Provincial Health Building.

In last year's Report reference is made to some difficulties being encountered at that time by the Transfusion Service in their new quarters and it is a pleasure to report now that these have been almost entirely overcome.

NATIONAL HEALTH GRANTS

General

With the exception of the Tuberculosis Control Grant the total of each of the grants made available to British Columbia for the fiscal period ending March 31st, 1957, increased slightly over that made available in the preceding fiscal year. The total of all grants, exclusive of the Hospital Construction and Public Health Research Grants, amounts to $2,860,705 for the current fiscal year, which represents an increase of approximately $100,000 over that appropriated for the 1955–56 fiscal year.

The appropriation for new construction projects under the Hospital Construction Grant for the current fiscal year amounts to $558,155, as compared to $555,931 in the preceding fiscal year. In addition, there was a revote of $1,324,673 for this year, as compared to $403,928 in the last fiscal year.

The Public Health Research Grant is maintained as a central fund in Ottawa, and is allocated by Federal authorities.

In September, the Mental Health Grant was increased by the amount of $70,000 by a transfer of this amount from the Laboratory and Radiological Services Grant. At the same time the General Public Health Grant was similarly increased in the amount of $176,000. The transfer of funds to the Mental Health Grant was made to permit purchase of certain equipment and to assist with postgraduate training of staff. The funds transferred to the General Public Health Grant were required to assist with staff training, to provide staff and equipment for expanding local health services, to assist cardiac research, and to permit purchase of vaccine and equipment for the prevention and treatment of poliomyelitis.

Administration

The administration of the National health grants programme in the Province has been, again this year, very materially assisted by the co-operation and assistance accorded local officials by representatives of the Department of National Health and Welfare. It was a pleasure to have an opportunity to confer with D. M. Herron of the Federal department's administrative staff during his visit to this Province in June of this year.

Grants Received for the Year Ended March 31st, 1956

Total expenditures for the year ended March 31st, 1956, were $2,426,390, or 56.6 per cent of the total available, as compared with $2,938,220, or 69 per cent of the total grants available in the year ended March 31st, 1955. The decreased use of the National health grants is due mainly to lower expenditures under the Hospital Construction Grant. For various reasons there was a delay in commencing some of the proposed construction, so that claims could not be submitted as planned. Moreover, certain claims which were submitted in 1955–56 were paid out of funds allocated for the succeeding year. Another reason for the decreased rate of expenditure was the fact that much of the equipment ordered under the Mental Health Grant for the newly opened Child Guidance Clinic and Day Hospital for the Provincial Mental Health Services was not received by the end of the 1955–56 fiscal year.

Comparison of Amounts Approved and Actual Expenditures with Total Grants for the Year Ended March 31st, 1956

Grant	Total Grant	Approved		Actual Expenditures	
		Amount	Per Cent	Amount	Per Cent
Crippled Children	$43,754	$24,358	55.6	$22,055	50.4
Professional Training	43,754	41,490	94.8	37,965	86.7
Hospital Construction	1,493,801	941,527	63.0	415,941	31.3
Venereal Disease Control	43,754	43,754	100.0	43,754	100.0
Mental Health	606,628	606,025	99.9	499,928	82.4
Tuberculosis Control	366,070	313,060	85.5	282,738	77.2
Public Health Research	34,494	34,494	100.0	29,934	86.8
General Public Health	783,000	766,423	97.8	726,280	92.7
Cancer Control	299,857	234,341	78.1	216,421	72.1
Laboratory and Radiological Services	356,400	98,569	27.6	81,631	22.9
Medical Rehabilitation	84,658	57,553	67.9	51,851	61.2
Child and Maternal Health	132,491	19,903	15.0	17,893	13.5
Totals	$4,288,661	$3,181,497	74.2	$2,426,390	56.6

Excluding the Public Health Research Grant, 73.9 per cent of British Columbia's total allotment was approved for specific expenditures. The amount actually spent by British Columbia was 56.3 per cent of the total available to the Province.

Crippled Children's Grant

This grant is used to assist in programmes for the prevention and treatment of crippling conditions in children, including rehabilitation and training. The amount made available for the fiscal period ending March 31st, 1957, is $43,913.

Under this grant, the Crippled Children's Registry was established about four years ago and is located in the offices of the Assistant Provincial Health Officer. The operations of this Registry were reported on in some detail in last year's Report. It is interesting to note that the case load of the Registry continues to increase, at the rate of approximately 150 cases reported per month. This is a reflection of the excellent co-operation provided by the medical profession in the Province, since the reporting of disabilities by the physicians is on a voluntary basis. At the end of 1956 the total number of cases registered will number approximately 9,000.

During the year, liaison between the Registry and the Provincial Rehabilitation Co-ordinator was further developed, with a view to assisting in the future planning of rehabilitation services for certain of the disabled children. Close liaison continues as well between the Registry and the Local Health Services in the Province.

During the year, financial assistance was made available under this grant to permit the employment of a part-time speech therapist and audiologist at the Health Centre for Children. Assistance for this Centre was also continued in respect of the employment of an orthoptical supervisor and an orthoptical assistant.

Assistance was also continued under this grant to the Cerebral Palsy Association of British Columbia. One medical social worker, three physiotherapists, and limited driver service are thus made available to this Association.

Professional Training Grant

This grant, amounting to $43,913 this year, was utilized to provide graduate training for various professional public health and general hospital personnel, primarily physicians, nurses, and dentists. Assistance was also provided for a number of trainees in the Canadian Hospital Council extension courses in hospital administration and medical records. Short-term courses were provided for thirty personnel engaged in the health field in the Province. This included provision for the attendance of twelve medical health officers at a refresher course in Vancouver, sponsored jointly by the Department of Public Health, Faculty of Medicine, University of British Columbia, and the Health Branch.

Hospital Construction Grant

Funds available for the current year total $1,882,828 as compared with $1,493,801 last year. Of the current year's funds, $1,324,673 consists of a revote of funds unexpended in previous years. Submissions approved to date total approximately $487,156 for general hospitals, $58,559 for health units, and $662,189 for mental hospitals.

There still remains a considerable amount of hospital and health-centre construction to be undertaken in this Province, and we have been informed by the Federal officials that assistance under the Hospital Construction Grant will be available for a further period beyond March 31st, 1958.

Venereal Disease Control Grant

There has been no change in the utilization of this grant during the year, as the total amount is allocated to the Division of Venereal Disease Control, Health Branch, to match Provincial funds expended for this programme. Although the total funds expended for

this programme were decreased again this year, the amount appropriated from Provincial funds remains considerably in excess of the amount of this grant.

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

Mental Health Grant

Most of the projects submitted under the Mental Health Grant are initiated by the Provincial Mental Health Services, Department of the Provincial Secretary. The greater portion of the grant is devoted to the provision of staff and technical equipment for Mental Health Services institutions. A considerable sum is used to support research in the mental-health field by the Faculty of Medicine, University of British Columbia.

The grant for 1956–57 amounts to $608,954, but this has been found to be too little for the needs of this particular period.

It has therefore been necessary to transfer $70,000 from the Laboratory and Radiological Services Grant, thereby making the sum of $678,954 available for mental-health projects.

The Provincial Child Guidance Clinic occupied its new quarters in January. The equipment authorized for purchase with grant funds in 1955–56 was not all received in that fiscal period, thus it became necessary to continue the project to this year. Deliveries continue to be slow, but it is hoped that all approved items will be received before the grant expires.

The Mental Health Centre is to be inaugurated in January, 1957. The equipment for this unit was authorized for purchase with Mental Health Grant funds in 1955–56, but there were virtually no deliveries in this period. The project was resubmitted for continuation in 1956–57, and the bulk of the equipment has now been received.

A dental clinic has been established in the North Lawn Building of the Provincial Mental Hospital, Essondale, for the care of the tuberculous mental patients domiciled in this unit. The equipment was provided by a Mental Health Grant project.

In the West Lawn Building of the Mental Hospital a ward for men with severe neurological disabilities has been established. A physiotherapy service for this group of patients has been provided. The necessary physiotherapy apparatus was obtained with Mental Health Grant assistance.

The consultant services in general surgery, neurosurgery, and orthopædic surgery for the Mental Health Services continue to be supported by the grant. This year a consultant service in internal medicine has been added.

At the Woodlands School, New Westminster, a unit to accommodate in excess of 300 patients is in the final stages of construction. The basic equipment for this building has been authorized by a project submitted under the Mental Health Grant.

Several pieces of equipment have been secured for the Provincial Homes for the Aged this year. An Admitting and Infirmary Unit for the Home for the Aged, Port Coquitlam, is under construction. It is anticipated that grant funds will be used for basic technical equipment next year.

Further surgical equipment has been provided for the operating-room in the Crease Clinic.

Several of the research studies being conducted in the Department of Neurological Research were concluded this year. The final reports are being prepared for publication. The narcotic-addiction studies have also been concluded and a comprehensive report has been prepared.

A number of new research problems have been attacked this year. Mention should be made of the studies on the etiology of mental deficiency, utilizing the case material of The Woodlands School. It should be noted that considerable attention is being directed

to the problems of schizophrenia, the most crippling of all mental illnesses. This year three studies have been undertaken, each of which is concerned with a special aspect of the biochemistry of schizophrenia. It is expected that these studies will be continued next year.

Assistance was provided to bring Dr. Karl Menninger to Vancouver to lecture at the Summer School of the Vancouver Medical Association. He also lectured to the assembled staff of the Mental Hospital and Crease Clinic and later conducted a clinic on schizophrenia for the medical staff.

The psychiatric services of the Vancouver General Hospital received increased assistance through the appointment of a clinical psychologist and the expansion of the occupational therapist's schedule to full time.

Assistance was continued to the Royal Jubilee Hospital to support the occupational-therapy service in their Department of Psychiatry.

The Canadian Mental Health Association (British Columbia Division) was given financial support again, but in a smaller amount, this being the last year that a grant will be made. The Association has continued to thrive. The Mental Health Services have been well served by the volunteer services of the Association and special attention should be given to the successful operation of the apparel shops for men and women patients.

Professional training in psychiatry and clinical psychology for selected staff members has been continued.

The mental-health programme of the Metropolitan Health Committee of Greater Vancouver was supported as heretofore. The first group of senior school counsellors completed the course in mental hygiene and is now engaged full time in counselling in the various schools. Another course has been commenced for a second group of counsellors.

Tuberculosis Control Grant

The major responsibility for tuberculosis control in this Province rests with the Health Branch's Division of Tuberculosis Control, and most of the funds provided under this grant were allocated to programmes operated by this Division. These programmes include the free hospital-admission X-ray service throughout the Province, assistance in the provision of antimicrobials for the treatment of tuberculosis, community chest X-ray surveys, rehabilitation service, and some assistance in the provision of staff and equipment. In addition, some assistance is made available to the Vancouver Preventorium and the Greater Vancouver Metropolitan Health Committee for staff salaries.

The activities of the Division of Tuberculosis Control during the year are reported in detail in another section.

Public Health Research Grant

The research studies being supported under this grant include the study of antibiotic and hormonal control of tubercle-bacillus infection which was started in 1952 and is being sponsored by the Faculty of Medicine, University of British Columbia; investigation of diagnostic criteria of neo-natal hæmolytic disease due to fœtal-maternal ABO incompatibility, and ABO fœtal-maternal incompatibility as a cause of fœtal death; determination of human blood patterns and levels of adrenal-steroid hormones; the study of the etiology of non-specific urethritis by means of human-tissue culture, which was referred to in some detail in last year's Report. The research study relating to certain aspects of hospitalization in the Province was completed during the year. This study was started in 1953. New studies commenced during the year include a survey of the incidence of intestinal entozoa in British Columbia; a study of the growth of lymphocytic choriomeningitis virus in acute and latent infection; and studies on maternal mortality, maternal morbidity, and certain aspects of fœtal wastage in British Columbia.

General Public Health Grant

The National health grants regulation that not more than 75 per cent of certain grants can be committed for continuing services again caused some difficulty with the General Public Health Grant, since a large percentage of this grant is required for the provision of staff, which is a continuing service.

Due to past difficulties in keeping the recurring commitments within the required limits it was agreed in 1954–55 that the Province would absorb, over a three-year period, the salaries of certain Provincial Health Branch personnel which were provided for under two projects. At the end of the current fiscal year the salaries of these persons will be paid entirely from Provincial funds.

In the latter part of 1955 a new research project was commenced in Victoria under this grant, entitled "An Investigation into Factors Modifying the Ballistocardiograph Pattern." In 1956 support was given under this grant to the establishment of a glaucoma clinic in the out-patient department of the Vancouver General Hospital and to the institution of a training plan in the Simon Fraser Health Unit to give student practical nurses supervised experience in homes.

All phases of the general public health programme carried on by the local health services staff continue to receive assistance from this grant. Detailed information in regard to these services is given earlier in this Report, in the report of the Bureau of Local Health Services. Assistance is also continued to the Metropolitan Health Committee of Greater Vancouver and the Victoria-Esquimalt Board of Health.

Cancer Control Grant

This grant is used to assist in approved programmes for the detection and treatment of cancer. All allocations from this grant are required to be at least matched by Provincial funds.

The major portion of this grant is made available to the British Columbia Cancer Foundation, which is the recognized agent in this Province for the treatment and diagnosis of cancer. The operations of the British Columbia Cancer Foundation are outlined in a preceding section in this Report.

Additional assistance was provided to the British Columbia Cancer Institute for the purchase of replacement Cobalt 60 Beam Therapy Source.

Financial support was continued for the Provincial Biopsy Service. The total number of all biopsy examinations continues to increase quite markedly, there being a total of 13,347 such examinations during the first six months of 1956.

The cytology laboratory of the British Columbia Cancer Institute has continued to examine an increasing number of specimens during this year.

Laboratory and Radiological Services Grant

The Advisory Councils appointed last year have each continued to study and plan programmes in diagnostic services for the Province of British Columbia, and the Health Branch has found their advice invaluable. As a result of their recommendations, service programmes are being developed and some have been instituted this year.

Laboratory Services

Applications for assistance toward the purchase of equipment for laboratory services have this year been reviewed by a technical sub-committee of the Laboratory Advisory Council, and its specific recommendations are made to the Health Branch for action. Equipment applications for expansion of laboratory services have thus been approved for twenty-three hospitals this year.

One of the first problems which faced this Advisory Council was the shortage of trained technical personnel, and this deficiency has been under careful study this year. A survey of hospital laboratory personnel requirements conducted this year illustrated that the present demand greatly exceeded the supply, and a concerted effort was therefore made to institute additional training facilities. Approval has now been received for the first phases of a new training programme to be conducted at the Vancouver General Hospital, and it is expected that the first classes will begin training in 1957. This programme envisages a new concept in laboratory training in this Province, since it will present a concentrated course of didactic lectures and laboratory exercises for six months, to be followed by a second six-month term of hospital externship, at which time the candidates will write qualifying examinations for registration (CSLT).

Continued studies by this Council of the means by which rural areas of the Province might best be given good laboratory diagnostic services have now produced data for programmes of regional laboratory services. Two new regional services have been planned, one for the Lower Fraser Valley and the other for the Okanagan Valley, and the projects are now under review for final approval. The important features of the plans are that they call for direction by a pathologist, and strong technical support, neither of which is always easy to achieve in every hospital. Support has been continued for the pathological service at Trail-Tadanac Hospital, and here again regional responsibilities are gradually being assumed.

In co-operation with the Hospital Construction Division of the British Columbia Hospital Insurance Service, plans for laboratories in proposed hospital construction have been reviewed and recommendations made. In 1956, review and recommendations were made for twelve such laboratory plans.

Radiological Services

One of the first subjects given consideration by the Advisory Council on Radiological Services was the criteria for approval of requests for new equipment. It was agreed that consideration should be given to the qualifications and ability of the personnel available, both for operating the equipment and reading films, as well as the geographical location of the hospital and the type of medical practice in the area. Greater emphasis is placed on personnel and service than on equipment. However, the suitability of particular types of equipment is carefully investigated, and in one particular instance during the past year, assistance was recommended for three of the smaller hospitals to purchase a new type of X-ray unit on the understanding that information would be made available on the performance of this particular type.

As a result of a request from Kimberley and District Hospital and physicians in the East Kootenay area, the possibility of making available to the East Kootenay area the services of a radiologist is at present under active consideration. Basic information has been obtained, and a survey by a radiologist member of the Radiological Services Council is planned for an early date. With the continued co-operation of the physicians and the hospitals in the area it is hoped that it will be possible to finalize a plan for this service which will be satisfactory to all concerned.

In 1956, the efforts of the Laboratory and Radiological Services Advisory Councils and the Health Branch have been directed toward the fulfilment of planned expansion in the diagnostic services and definite accomplishments have been achieved.

Medical Rehabilitation Grant

Funds provided under this grant have assisted in the development of programmes related to the rehabilitation of disabled persons. Assistance to the Western Rehabilitation Centre to provide staff to enable them to admit trainees requiring some nursing care has been continued. This has proved of great benefit to trainees who heretofore could not have been admitted as early for training.

Assistance to the Vancouver General Hospital to continue physiotherapy service to poliomyelitis patients also has been continued, as well as support for the pilot plan for chronic patients at Glen and Grandview Hospitals.

Funds have also been made available to provide for the employment of a physician to act on a part-time basis as Chairman of the Rehabilitation Assessment Team and Medical Rehabilitation Consultant. A pattern for the review of individual cases referred to the Provincial Co-ordinator of Rehabilitation has been developed with the co-operation and assistance of the Western Rehabilitation Centre. The Medical Rehabilitation Consultant is providing consultative service to the Health Branch on the medical rehabilitation of these cases. In addition, he advises on general aspects of rehabilitation service which may be provided by the Health Branch.

A new service under this grant was commenced this year to provide for medical rehabilitation and associated services for disabled persons referred for rehabilitation service who have a favourable rehabilitation prognosis, who are medically indigent, and for whom no other financial assistance is available. This project has also provided for the purchase of prostheses and other medical aids, and financial assistance for the maintenance of those who are required to live away from their homes temporarily in order to receive rehabilitation service.

Child and Maternal Health Grant

The extension of the Child and Maternal Health Services continues to progress satisfactorily and is supported by funds made available under this grant. A total of seven incubators for care of premature infants was purchased, and of this number five have been allocated to public hospitals in the Province, with the remaining two to be held in reserve for later allocation.

Assistance was continued to the Greater Vancouver Metropolitan Health Committee to permit expansion of a prenatal programme in the Greater Vancouver area. Funds were made available for the purchase of certain specialized equipment for the Health Centre for Children, Vancouver. The salaries of a consultant pædiatrician and public health nurse employed at the Health Centre for Children were also assisted under this grant. These personnel provide specialized assistance to child health services throughout the Province.

In 1955 prenatal group-classes were started by local health services in various areas of the Province. The provision of certain essential equipment for this programme has been possible by utilization of funds available under this grant.

Funds were made available to the Faculty of Medicine, University of British Columbia, for a study concerning adrenal steroids and immune reactions in pregnancy. A study of the epidemiology and control of infections caused by staphylococcus pyogenes, undertaken by the British Columbia Medical Research Institute, also received support under this grant.

REPORT OF THE DIVISION OF LABORATORIES

E. J. BOWMER, DIRECTOR

This year sees the completion of the first quarter-century of the existence of the Provincial Laboratories as a separate entity within the Department of Health and Welfare of British Columbia, and also the first full year in its new quarters in the Provincial Health Building. During these twenty-five years the work load of the laboratories has increased from about 41,000 tests in 1931 to the present total of roughly 350,000 tests in 1956, with a peak year in 1953 of 371,000. This additional work done is reflected in an increase of staff, both technical and non-technical, from twelve in 1931 to over fifty in 1956. The experiences in the past year have demonstrated the wisdom of providing ample accommodation for the Division of Laboratories, together with space for future expansion.

There have been two major losses in the administrative staff of the Division, each in its way irreplaceable. At the end of September Dr. C. E. Dolman resigned, after twenty-one years as Director of the Division on a part-time basis, in order to devote himself full-time to his university duties. During his tenure of appointment there was almost a ten-fold increase in the work load and a corresponding increase in the complexity and number of techniques used. At the end of March, Miss Donna Kerr, who had been Assistant Director of the Laboratories since their inception in 1931, resigned. After her long and faithful service, Miss Kerr's departure has left a gap that will be difficult to fill, but her methods and teachings remain firmly embedded in the work of the Laboratories.

This year there has been an all-round increase in the total number of tests carried out at the main laboratories, amounting to roughly 7 per cent of the 1955 figures. This increase mainly affects cultural examinations for *M. tuberculosis,* enteric pathogens, staphylococci, and fungi, and also the microscopic examination of fæces for intestinal parasites. In Table I the total number of tests carried out at the main laboratories during 1956 are shown, with the comparative figures for 1955. Table II lists the tests carried out in 1956 at the branch laboratories.

TESTS FOR THE DIAGNOSIS AND CONTROL OF VENEREAL DISEASES

There has again been a rise in the number of specimens received for the diagnosis or exclusion of syphilis, amounting to nearly 10 per cent compared with last year. Although the incidence of syphilis has been greatly reduced in recent years, the number of blood specimens submitted for serodiagnosis rises steadily because of large-scale serological surveys, which are carried out with a view to bringing missed and latent cases to treatment. The largest survey carried out this year was on a group of personnel of the armed forces. Out of 1,281 persons examined, only eight have been found to give reactions, a low incidence in a healthy young adult population. Although dark-field examination of exudates for the presence of *Treponema pallidum* is a lengthy technique, the time spent on nearly 300 examinations has been amply repaid by the finding of typical spirochætes in six cases of primary syphilis and one of secondary syphilis.

The *Treponema pallidum* immobilization (T.P.I.) test is carried out for diagnosis of doubtful cases of syphilis by the Ontario Provincial Laboratories and by the Federal Laboratory of Hygiene. For the past four years the supervision and administration of the programme in British Columbia has been the responsibility of the Division of Venereal Disease Control. The Division of Laboratories has now taken over the local supervision and administration, and notification to the medical profession of this change in procedure has been published, together with information regarding the value and reporting of this useful test.

In November the main laboratories began participation in the eighth of a series of surveys of serodiagnostic procedures organized by the Federal Laboratory of Hygiene. The object of these surveys is to ensure uniformity in testing of sera and reporting of results throughout the Provincial laboratories of Canada. It is not physically possible to include in this survey the other laboratories in the Province which carry out standard tests for syphilis (S.T.S.), but a careful control of the results obtained by these laboratories is maintained by refresher courses for their technicians and by replicate testing of their positive findings. The visit of Dr. R. H. Allen, Chief of Clinical Laboratories at the Laboratory of Hygiene, Ottawa, in October, was of particular value for the discussion of serological problems.

The number of specimens submitted for direct microscopic and cultural examination for gonococci has shown a slight increase. Experiments have been carried out in collaboration with the Division of Venereal Disease Control to determine the survival time of gonococci in the transport medium, with a view to making this method available to physicians in areas not too remote from Vancouver.

TESTS RELATING TO THE CONTROL OF TUBERCULOSIS

There has again been a considerable increase in the number of laboratory tests for the diagnosis and control of tuberculosis. Approximately 20 per cent more specimens have been received requiring cultural examination, and there has also been roughly a 5-per-cent increase in other tests carried out in the tuberculosis laboratory. No less than six bacteriologists/technicians have resigned during the year under review and in each case this has necessitated the training of a replacement. In no other section of the laboratory is the bacteriological hazard to the technician so high, and great credit is due to the senior bacteriologist for maintaining the high technical standard in these difficult circumstances.

An unusual strain of *Mycobacterium tuberculosis* was isolated from the axillary gland of a woman who worked in a packing plant as an eviscerator of chickens. The organism was atypical in its cultural characteristics and was referred to the Animal Diseases Research Institute of the Federal Department of Agriculture at Hull, Que. The results of the pathogenicity and tuberculin tests indicated that this organism was an avian strain of *M. tuberculosis,* comparable in virulence to standard strains. These findings are recorded in view of the extreme rarity of human tuberculosis being due to authenticated avian strains of *M. tuberculosis.* The extensive work carried out by the Animal Diseases Research Institute on this interesting organism is gratefully acknowledged.

SALMONELLA-SHIGELLA INFECTIONS

This year has been one of the busiest on record for the enteric section. The number of specimens submitted for the isolation of enteric pathogens has shown roughly a 15-per-cent rise on last year, and this figure has only been exceeded in 1954.

The Salmonellæ isolated from different patients numbered roughly 300, the highest figure so far recorded in the Province. The organisms, including *S. typhi,* isolated from these patients were of eighteen different serological types. The most common, in decreasing order, were *S. heidelberg* (eighty-one), *S. typhi-murium* (eighty), *S. paratyphi B* (thirty-three), and *S. typhi* (twenty-eight).* It was the first time that two of the serological types, *S. panama* and *S. weltevreden,* had been isolated in British Columbia. The high incidence of Salmonellosis this year in the Province has in large part been due to a major outbreak of infection caused by *S. heidelberg,* and to the continued high incidence of *S. typhi-murium* infection. The major outbreak due to *S. heidelberg* occurred in the maternity wings of two Vancouver hospitals during September and October. Two infants

* Figures up to November 16th, 1956.

died, the organism being isolated from autopsy specimens. Bacteriological investigations failed to reveal the source of infection, but a total of nearly sixty mothers, infants, and nursing personnel were found to be excreting *S. heidelberg,* many of them without symptoms. The spread of the outbreak was curtailed by stringent hygienic measures, including a widespread stool-sampling programme. It is of interest to note that a hospital in Nova Scotia had an outbreak of Salmonella infection, due to *S. heidelberg,* affecting twenty-seven patients in May, 1956.

S. typhi-murium has caused more outbreaks than any other Salmonella. This organism is widespread in man and animals, and human cases may often have few or no symptoms. One small outbreak of *S. typhi-murium* infection occurred in a logging camp at Attwood Bay (involving six persons). The first case resulted in death from fulminating enteritis, the organism being recovered from the fæces before the patient died. This organism has also been isolated during the current year from domestic ducks received from the Animal Pathology Division, Federal Department of Agriculture, at the University of British Columbia.

Of the twenty-eight persons found to be excreting *S. typhi,* twenty-three were cases and five were carriers. In July, 1956, a small outbreak of typhoid fever occurred in Aldergrove in a Mennonite community. The organisms isolated in this outbreak were *S. typhi,* phage type T. A larger outbreak occurred in the Burns Lake area in September and October, also in a Mennonite community, and all fifteen cases which were proven bacteriologically were due to organisms of the same phage type. The Director of the Cariboo Health Unit has made a careful study of the latter outbreak, which is believed to have been caused by a carrier infected in 1955, who transmitted the infection to her young children in 1956. The other *S. typhi* strains isolated during the year were recovered from five small typhoid incidents. Organisms of five different bacteriophage types were isolated; it is therefore certain that the typhoid incidents were not associated with the two outbreaks already described.

The incidence of *S. paratyphi B* infection was higher than in any previous year. There were, however, no major outbreaks, although two-thirds of the infected persons were resident in the Prince Rupert area. The carrier state is more common in paratyphoid fever than in other Salmonella infections and it is not surprising that over one-third of these occurred in carriers.

Shigella infections remained at a high level, the relatively benign *Shigella sonnei* usually being the causal organism. There has however been a further marked increase in the incidence of the usually more serious type of dysentery due to *Shigella flexneri.*

The maximum incidence of Salmonella-Shigella infections occurred during the months of September and October, and it reflects great credit on all members of the staff that this section was able to undertake a three-fold increase in the work load. The average number of specimens examined per normal working-day is approximately forty-five, yet the laboratory managed to examine as many as 100 to 130 specimens daily during this intensive period. In the investigation of the *Salmonella heidelberg* outbreak well over 600 specimens of fæces were examined in an attempt to limit the spread of the epidemic.

In addition to isolating enteric pathogens this section undertakes agglutination tests for a variety of diseases. The demand for agglutination tests for the diagnosis of typhoid and paratyphoid fevers has shown a significant decrease, due not to a lowered incidence, but to a growing awareness among physicians that the most satisfactory technique for the bacteriological diagnosis of typhoid fever is isolation of the causal organism. This is sound public health practice.

An interesting case of tularæmia was diagnosed by agglutination tests. The illness followed the skinning of a rabbit and infection presumably entered through abrasions on the man's fingers. The clinical findings were typical of infection with *Pasteurella tula-*

rensis and the serological findings, a four-fold rise in specific agglutination titre in six days, were considered diagnostic. This is the fourth human case to be diagnosed in British Columbia by serological methods at the Division of Laboratories during the past decade.

OTHER TYPES OF TESTS

Bacteriological Analysis of Milk and Milk Products and Water

There has been no further addition to the number of specimens of milk submitted for analysis, but the actual work done has increased, due to the introduction of the Resazurin test for raw milks required by the "Milk Industry Act," 1956. This Act requires that milk samples shall be taken once monthly, and is expected to result in a 25-per-cent increase in milk testing.

The shipment of milk and water samples from distant health units to the main laboratories still presents a major difficulty. Intensive study of this problem is being carried out, but no single solution has been discovered.

It is still found necessary on a few occasions to issue water-sampling bottles to private individuals who live in unincorporated parts of the Province, remote from health units. This practice is unsatisfactory, but the problem is likely to persist in isolated parts of British Columbia.

Bacterial Food Poisoning

A three-fold increase in the number of specimens of food submitted for investigation has occurred since last year. Coagulase-positive *Staphylococcus hæmolyticus* was isolated on no less than eight occasions from such widely differing foodstuffs as pork, ham, chicken, salami, custard pie, and fish paste. This organism frequently develops an enterotoxin which causes diarrhœa and vomiting. Other organisms isolated from foodstuffs suspected of causing bacterial food poisoning were *Clostridium perfringens (welchii)* from cooked turkey and *Streptococcus hæmolyticus* from cheddar cheese.

Diphtheria

In spite of the continued low incidence of diphtheria there has been a moderate increase in the number of swabs submitted for exclusion of *Corynebacterium diphtheriæ*. On only two occasions have virulent strains of *C. diphtheriæ* been recovered. But the clinic suspicion of diphtheria has resulted in frequent widespread collection of swabs from contacts of the patient.

Parasitic Infestations

The increasing awareness by physicians of parasitic infestation as a cause of disability is reflected in an increase of over 40 per cent in the number of specimens submitted for protozoan cysts and helminth ova. The helminth ova recovered were of nine different types, including five indigenous species and four which originated in the Orient. Four different species of protozoan parasites of man have also been demonstrated. The proportion of positive findings was over 20 per cent of the specimens examined, which is a clear indication of the value of this service in the diagnosis of communicable disease in the Province of British Columbia.

Fungous Infections

As indicated in the two previous Annual Reports, there is a continued marked increase in requests for mycological examination. In the current year approximately 30 per cent more specimens have been received than in 1955, which indicates that there is a real requirement for this type of service. A large proportion of the work is concerned

with the differentiation of pathogenic from non-pathogenic yeasts, and approximately 20 per cent of the specimens received for this type of examination were found to contain *Candida albicans.* An increasing number of specimens have also been received for the diagnosis of systemic and dermatomycoses. *Microsporum canis* has been isolated from skin lesions on seven occasions and various species of Trichophyton from twenty specimens.

Miscellaneous Tests

The continued widespread concern of physicians over outbreaks of staphylococcal infections in hospitals, which was referred to in the last Report, is reflected in a 25-per-cent increase in specimens submitted for culture. The Director has attended meetings of the Staphylococcal Infections Committee, and it is at the request of this Committee that facilities for the phage-typing of strains of Staphylococcus are being made available. Nearly one-third of the specimens submitted for isolation of Staphylococci are found to contain the variety of this organism which is pathogenic to man, namely, coagulase-positive *Staphylococcus hæmolyticus.* The bacteriophage-typing of strains of Staphylococcus is a useful epidemiological tool in studying the spread of infection due to this organism in hospitals and other closed communities. This is a highly technical procedure requiring considerable skill and knowledge. With the assistance of National health grants, and using phages and strains provided by the Federal Laboratory of Hygiene, it has been possible to carry out the preliminary work necessary for opening a phage-typing laboratory. It is hoped that this service will be available in selected outbreaks of infection next year.

Out of some 200 specimens of blood submitted for culture, pathogens were demonstrated in approximately 5 per cent. The twelve organisms isolated were *Staphylococcus hæmolyticus,* coagulase-positive (six), *Streptococcus viridans* (three), *Streptococcus hæmolyticus* (two), and *S. paratyphi B* (one).

A small quantity of toxoplasmin, used for the diagnosis of toxoplasmosis, has been provided by a drug manufacturer in the United States. In one case the diagnosis of this condition was confirmed by using the antigen.

An increasing number of blood specimens has been received for the serological diagnosis of virus diseases, such as the Encephalitides. These tests are very time-consuming and only on rare occasions give diagnostic results. One of the main disadvantages of the test is that an acute phase serum and a convalescent phase serum from the patient must be tested at the same time, and the diagnosis can therefore only be confirmed retrospectively. In five cases a diagnosis of epidemic parotitis (mumps) has been confirmed serologically. For the laboratory diagnosis of suspected poliomyelitis, the simplest and most conclusive test is the isolation of the virus from stool specimens taken at a very early stage of the disease. This requires the use of the tissue-culture technique, which is not at present available in the Division of Laboratories. The Virus Laboratory at the Federal Laboratory of Hygiene, Ottawa, has, however, carried out this test when requested, and this service has been much appreciated. No isolations of polio virus have been made from suspected cases during the year.

National health grants have made possible the appointment of a full-time chemist (Bacteriologist Grade 2) in this Division. The Chemistry Laboratory will in the new year be able to undertake the chemical analysis of water samples and also certain specialized public health tests on the effluent of industrial and sewage plants. At the present time there is no official laboratory at which such tests can be carried out free of charge and this new service will meet a much-needed requirement, which up to now has been filled on a voluntary basis by the laboratory of the Metropolitan Water Board and the city analyst's laboratory.

BRANCH LABORATORIES

The branch laboratories at Victoria and Nelson showed no significant change in the work load, the total number of tests being slightly lower than the average for the past five years. The scope of their work remains similar to that of the main laboratories, but specimens requiring confirmation are referred to the main laboratories. The senior technician at the Royal Jubilee Hospital, Victoria, spent several days in the Division bringing herself up to date in various techniques and discussing methods.

Plans for the new Kootenay Lake General Hospital at Nelson are still under consideration, and adequate provision has been made for a public health laboratory section in the hospital laboratory. It is unlikely that the new hospital will be occupied within the next year.

GENERAL COMMENTS

During the year under review, nine new positions have been added to the establishment under National health grants. Although the new projects for which these appointments are intended are not fully operative, two bacteriologists are now employed on staphylococcal bacteriophage typing, and one additional bacteriologist has been added to the serology and to the enteric laboratories in order that services may be extended. Furthermore, as already mentioned, a chemist is now available to undertake the chemical examination of water and sewage effluents. At the time of writing, thirty-eight requisitions for bacteriologists/technicians have been raised this year, a high proportion of the forty-two appointments now allowed in the technical establishment. It is to be hoped that the increase in establishment and recent rises in salary will do much toward stabilizing the staff position and thereby permit extension of the services offered by this Division. Bacteriologists on the staff continue to take an active part in the instruction of students in the Department of Bacteriology and Immunology at the University of British Columbia.

In February, Dr. E. J. Bowmer joined the staff as Physician Specialist and, on the resignation of Dr. C. E. Dolman in September, he was invited to take over as Acting Director. On November 1st, A. R. Shearer, Technical Supervisor of Clinical Laboratory Services, was appointed Assistant Director of the Division in place of Miss D. Kerr.

While he was Director, Dr. Dolman attended the annual International North-West Conference on Diseases in Nature Communicable to Man, which was held at the University of Utah, Salt Lake City, from August 30th to September 1st, serving as chairman of a session for the discussion of the Encephalitides. He was elected Secretary-Treasurer of the Conference for 1957, when its meeting will be held in Vancouver, B.C. Dr. Dolman also contributed two papers for publication: " The Staphylococcus: Seven Decades of Research (1885–1955)" in the Canadian Journal of Microbiology (1956, *2,* 189), and " The Epidemiology of Meat-borne Diseases " to be published in a monograph by the World Health Organization.

The present Director has carried out a preliminary survey of the bacteriological work performed at two of the hospital laboratories of the Division of Tuberculosis Control and has taken part in the annual meeting of that Division. He has reported to the Health Officers' Council held at Victoria in September on the laboratory diagnosis of poliomyelitis and the *Treponema pallidum* immobilization test for syphilis. In December, he attended the twelfth annual meeting of the Technical Advisory Committee on Public Health Laboratory Services, held at Ottawa, and the laboratory section meeting of the Canadian Public Health Association, and visited the Connaught Medical Research Laboratories and the Ontario Provincial Laboratories in Toronto.

It is a pleasure to record the Director's appreciation of the staunch loyalty of the senior and junior staff, both technical and non-technical, which has made it possible for the high standard of work and progress of this Division to be maintained in spite of a complete change in the administrative staff.

TABLE I.—STATISTICAL REPORT OF EXAMINATIONS DONE DURING THE YEAR 1956, MAIN LABORATORY

	Out of Town	Metropolitan Health Area	Total, 1956	Total, 1955
Animal inoculations—				
Tuberculosis	190	223	413	464
Diphtheria virulence	5	2	7	9
Blood serum agglutination tests—				
Typhoid-paratyphoid group	4,692	5,336	10,028	10,404
Brucella group	1,608	3,936	5,544	5,908
Paul-Bunnell	1,252	2,213	3,465	3,387
Miscellaneous	21	24	45	56
Complement fixation tests for viruses	25	87	112	67
Cultures—				
M. tuberculosis	12,379	12,574	24,953	20,475
Salmonella and Shigella organisms	6,020	6,331	12,351	10,507
C. diphtheriæ	870	8,420	9,290	8,030
Hæmolytic staphylococci and streptococci	709	4,364	5,073	3,758
N. gonorrhœæ	.....	8,894	8,894	8,306
Fungi	128	465	593	460
Food poisoning	17	39	56	30
Miscellaneous	1,034	1,392	2,426	2,392
Direct microscopic examination—				
N. gonorrhœæ	6,438	20,981	27,419	24,740
M. tuberculosis (sputum)	10,890	9,401	20,291	17,821
M. tuberculosis (miscellaneous)	1,489	3,173	4,662	4,421
Treponema pallidum	23	272	295	318
Vincent's spirillum	19	204	223	242
Intestinal parasites	553	1,737	2,290	1,633
Miscellaneous	662	1,203	1,865	1,900
Serological tests for syphilis—				
Blood—				
V.D.R.L.	53,223	110,333	163,556	149,546
V.D.R.L. quantitative	419	952	1,371	2,096
Complement fixation	7,457	14,070	21,527	21,273
Cerebrospinal fluid—				
Complement fixation	816	1,496	2,312	2,346
Quantitative complement fixation	13	22	35	50
Cerebrospinal fluid—				
Cell count	119	188	307	426
Protein	639	989	1,628	1,687
Colloidal reaction	821	1,534	2,355	2,375
Milk—				
Standard plate count	3,360	1,995	5,355	5,417
Coli-ærogenes	3,339	1,994	5,333	5,413
Phosphatase	2,052	1,479	3,531	3,583
Resazurin	103	.....	103	.....
Water—				
Standard plate count	3	1,070	1,073	999
Coli-ærogenes	6,500	1,942	8,442	8,528
Ice-cream—				
Standard plate count	3	252	255	214
Coli-ærogenes	3	252	255	212
Phosphatase	3	248	251	213
Cottage cheese—Standard plate count	.....	112	112	113
Unclassified tests	70	50	120	152
Totals	127,967	230,249	358,216	329,971

TABLE II.—STATISTICAL REPORT OF EXAMINATIONS DONE DURING THE YEAR 1956, BRANCH LABORATORIES

	Nelson	Victoria
Animal inoculations	------	18
Blood serum agglutination tests—		
Typhoid-paratyphoid group	456	62
Brucella group	91	66
Paul-Bunnell	------	167
Cultures—		
M. tuberculosis	------	3,867
Typhoid-Salmonella-dysentery group	114	905
C. diphtheriæ	130	2,582
Hæmolytic staphylococci and streptococci	132	2,582
N. gonorrhœæ	------	257
Fungi	------	217
Miscellaneous	535	------
Direct microscopic examinations—		
N. gonorrhœæ	269	385
M. tuberculosis (sputum and miscellaneous)	268	4,064
Treponema pallidum	------	2
Vincent's spirillum	17	7
Fungi	------	223
Intestinal parasites	59	300
Serological tests for syphilis—		
Blood—		
V.D.R.L.	3,938	18,525
V.D.R.L. quantitative	34	193
Complement fixation	------	1,636
Cerebrospinal fluid—		
Complement fixation	------	402
Cerebrospinal fluid—		
Cell count	------	396
Protein	4	394
Colloidal reaction	63	265
Milk—		
Standard plate count	1,250	1,164
Coli-ærogenes	1,250	1,164
Phosphatase	481	1,164
Resazurin	24	------
Water—		
Standard plate count	------	1,242
Coli-ærogenes	1,393	1,242
Unclassified tests	21	------
Totals	10,529	43,491

Grand total, 54,020.

REPORT OF THE DIVISION OF VENEREAL DISEASE CONTROL

A. A. LARSEN, DIRECTOR

This year a marked increase in the number of venereal infections reported in British Columbia has reversed the downward trend that began in 1947. During the past few years many areas in the United States have reported an increased incidence of venereal infections. Last year three Canadian Provinces also reported that venereal diseases were becoming more prevalent. This upward trend now appears to have spread to British Columbia.

An examination of the notifications received reveals that the increase was due to 901 more cases of gonorrhœa being reported this year than in 1955. Only eight cases of infectious syphilis were discovered, which is a decrease of five from the year before and only one case could be proven to be late congenital syphilis was reported, although it is probable that some other patients, considered to have acquired their infections as adults, were in fact born with the disease. There were 132 cases of latent or symptomless syphilis brought to light this year by routine blood testing and forty-nine new patients were reported as having one or other of the complications of late syphilis.

Venereal diseases other than gonorrhœa and syphilis reported included six cases of chancroid. Contrary to the usual experience, three of these cases were apparently contracted in the Province.

The reasons for the increase in the incidence of gonorrhœa, first noticed in the latter half of 1955, are not yet fully apparent. It is obvious from an examination of the individual reports submitted that some of the increase has come as a result of the "boom-town" conditions created by the major construction projects underway in many areas of the Province. There is some evidence that the venereal diseases are now being reported more frequently by physicians in private practice than was the case in the past. A feature of this increase which is causing concern is the growing number of young people in their mid and late teens who are coming to our clinic with infections. Invariably the diagnosis of a venereal infection in these young people has led to the discovery of several more similarly infected amongst their companions.

Another factor less clearly defined, but nevertheless apparent, is the change in attitude of many of our clinic patients to their disease. Before the advent of the sure and rapid treatment offered by penicillin, fear of acquiring a venereal disease acted as a deterrent to many of those who are now our patients. The casual admission of infection and request for treatment from this group is very revealing.

ADMINISTRATION

Although no major changes were made in the organization of this Division in 1956, a number of operating procedures were dispensed with or modified. This should lead to increased economy of operation.

Early in the year a survey of office and recording procedures was made by a team of administrative officials from other branches of the Health Branch. A number of changes in office routine were suggested, most of which have now been put into force. A revision of our basic clinical recording system is now in the planning stage as is a study of the statistical recording done for us by the Division of Vital Statistics. The elimination of non-productive recording and statistical compilations should result in this Division being able to operate with a minimum of administrative staff.

For the past four years the Provincial Laboratories in Ontario and the Federal Laboratory of Hygiene in Ottawa have very kindly performed approximately eighty T.P.I. tests for the detection of latent syphilis each month for the Division, and for the private physicians in the Province. The handling and the reporting of these tests has, until this

year, been done by the Division of Venereal Disease Control. In December this function was taken over by the Division of Laboratories and at the same time the directors of the local health units throughout the Province were given the responsibility of reviewing all requests for the tests in their area in order that the best use might be made of the limited number available.

Full advantage was again taken of National health grants. Just under 40 per cent of the yearly operating costs of the Division were derived from these grants which were used for such purposes as providing free treatment services in the rural areas of the Province and for the purchase of drugs for patients unable to afford the cost themselves. A National Health Research Grant made to the Division allowed Dr. D. K. Ford to continue his research on the etiology of non-specific urethritis at the British Columbia Medical Research Institute. A final report on this project is expected early in 1957.

The Division was again able to assist in the operation of the University Bio-Medical Library through a National health grant made for the purpose of purchasing up-to-date books and journals relating to venereal diseases for the library.

Again this year we were able to employ a second-year medical student for summer relief work at the Vancouver clinic. In addition to his duties at the clinic, the student did the initial work on two long-term projects being undertaken by the Division. The first of these is a study of the value of the standard serologic test for syphilis as a diagnostic tool in the light of the decreasing incidence of syphilis in this Province.

The second study, which it is planned will be used by the student for a graduating thesis, is a survey of the facilitation processes now in operation in Vancouver and of their importance as a factor in the spread of venereal diseases.

In May, the Director of the Division attended a week-long conference of venereal-disease control directors held at the University of Washington under the sponsorship of the United States Public Health Service.

CLINICS

Few changes have been made in the operation of our public clinics this year. The practice of rotating our staff of part-time physicians on a yearly basis has been continued in order to give as many doctors as possible in private practice an opportunity of becoming skilled in the diagnosis and treatment of venereal diseases.

The increased attendance at our clinics, held twice a week at Health Unit No. 1 on Abbott Street, mentioned in our last year's Report, has continued with some 400 more patient visits being recorded this year. It was found necessary to transfer a physician from another clinic to help carry this heavier load, and for the latter part of the year three clinics a week have been held at Health Unit No. 1. Every effort is being made to limit the attendance there to those who cannot or will not go to our main Vancouver clinic.

With the opening of the new Vancouver City Gaol in the spring the Division was provided with very much improved quarters there through the generosity of the Police Commission and the Chief Constable. It is now possible for our staff to carry out their work at the city gaol with a great deal more privacy and with much less inconvenience to the gaol staff.

With the decreasing attendance at our Victoria clinic, a good deal of thought has been given to economies which might be effected in its operation without depriving the city of the service that still seems to be necessary. No definite conclusions as to how this might be done have as yet been reached.

The weekly clinic held in New Westminster at the Simon Fraser Health Unit by a member of our part-time staff has been discontinued. The Director of the Health Unit has undertaken to act as clinic physician and to see patients for us daily. The Division has employed a nurse for two hours a day to assist at the clinics, to keep the patients' records and to trace all contacts named by the patients who live in the City of New Westminster.

The clinic held once weekly at the Girls' Industrial School has been temporarily reinstituted as it was found that as soon as examinations by means of cultures were stopped there, the number of new cases discovered dropped very rapidly. Ways are now being sought to make a culture service available to the medical staff of the Girls' Industrial School. When this has been done, our clinic service to this institution will again be discontinued.

The clinics held in the male section of Oakalla Prison Farm have been rearranged so that one of the part-time physicians employed there could be transferred to other duties. A regular clinic is held now only once weekly and during the rest of the week a physician is on call, but attends only when there is a patient for him to see. A nurse from the Vancouver clinic attends daily to take blood from all newly admitted inmates. It is hoped that it will soon be possible to make arrangements with the medical staff at Oakalla to take all routine admission blood specimens and to care for their own patients with venereal diseases with the Division providing only consultative service.

The clinics held in the female section of Oakalla, the Juvenile Detention Home, the Prince Rupert Gaol, and the Prince George Gaol have continued unchanged and still appear to be worthwhile.

EPIDEMIOLOGY

There have been a number of administrative changes affecting the members of our staff employed in patient interviewing and contact tracing. Recognition has been granted to these members of our staff by the Civil Service Commission and they are now formally designated as epidemiologic workers. Provision has been made for a senior classification and for a training classification in addition to the regular staff positions. Two years in the training classification are now required for any member of this section who is not a registered nurse or does not have a university degree in an appropriate field when they are taken on staff.

The unexpected death of Edwin Southen, a member of this section, while on duty, was a shock to everyone in the Division. No appointment will be made to fill this vacant position unless the remainder of the section prove to be unable to carry the additional load.

Arrangements are under way to transfer the public health nurse seconded to the Cariboo Health Unit, Prince George, from the staff of the Division to the staff of the Cariboo Health Unit. It is still felt very necessary to have a nurse in the Cariboo Health Unit who is free to spend as much time as is necessary in the patient interviewing and in contact tracing.

During the year two meetings were held with representatives of the police, Liquor Control Board, and Metropolitan Health Committee in regard to the part apparently played by many hotels and rooming houses in facilitating the spread of venereal disease. One of these meetings was also attended by the owners of the major offending hotels.

In order to determine definitely whether or not there are any establishments that are contributing significantly to the venereal-disease problem by facilitating the meeting and subsequent exposure of healthy and infected persons, a detailed study was begun this year of the facilitation processes now in operation in Vancouver. Every infected male patient and a number of infected female patients are being asked a series of carefully planned questions, which it is hoped will reveal whether a third party assisted their meeting with or exposure to the infected person who gave them their disease.

The contact indices established by a previous director have shown that our efforts to bring infected contacts to treatment have been more successful than ever before. In the latter half of the year an average of 1.8 female contacts were secured from every infected male patient attending our clinics. For this same period about 60 per cent of these contacts were located. Of the located female contacts, 80 per cent proved infected when examined.

Similar indices relating to the contacts of patients named by private doctors revealed that no improvement over last year has taken place. Less than one female contact per infected male patient was named and of these it was possible for our staff to locate only about 22 per cent, due to the incomplete information recorded on the reports received from private physicians.

It is a pleasure to acknowledge the assistance that has been given to us throughout the year by the Indian Health Services, the Vancouver City Police, the Metropolitan Health Committee staff, the British Columbia Hotels' Association, the Liquor Control Board, the three Canadian armed services, and the Immigration Medical Services of the Division of National Health and Welfare.

SOCIAL SERVICES

The Social Service section of the Division continued to function as an integral part of the treatment team in the Vancouver clinic, offering a direct casework service to patients and a consultative service to clinic physicians, as well as taking an important part in the Division's educational programme.

It has long been apparent to us that the venereal diseases which cause patients to present themselves at our clinics are seldom the major problem, but are merely symptomatic of their other difficulties. It is, therefore, not felt appropriate to carry individual patients on a casework programme for any length of time. Usually the service offered is direct and short term, giving the patients help with immediate problems, followed by a referral to an appropriate community agency.

During the year there were over 1,000 patient interviews conducted by the clinic social worker. While many patients appeared to profit from these counselling interviews, it is our feeling that too few referrals to other community agencies resulted. The main reason for this appeared to be a reluctance or an inability on the part of the patients to recognize their problems. There also appeared to be a need for expanding the community services now available to adolescents and young adults since often there was no appropriate agency to whom our patients could be sent for the help that they needed.

During the first part of the year social work interviews were conducted on a routine basis and every patient attending the clinic was seen at least once. In the latter half, interviews were conducted on a selective basis with referrals being made to the social worker by the clinic physicians when it was felt that the patient would profit from assistance. This new procedure, it is felt, has resulted in more efficient use of the social worker's time and professional skills.

As a result of the apparent increase in the numbers of young adults and adolescents attending the Vancouver clinic, which has been previously mentioned, several meetings were held with community health, educational, and welfare agencies. These meetings served as a means of exchanging information and it is hoped also as an incentive to action on what is essentially a community problem.

The clinic social worker was also invited to address a group of school counsellors on the topic of counselling adolescents. This provided a unique opportunity for him to interpret the function of our clinics and the needs of adolescents in general.

With the increase in effectiveness of the medical treatment and of the epidemiological control over venereal disease, it is becoming more apparent that the root cause of venereal disease lies in the patient's lack of personal or social adjustment and that whatever can be done toward alleviating those conditions, which predispose the individual toward promiscuity, will reduce significantly the total incidence of venereal disease.

EDUCATION

Attempts at venereal-disease control through individual discussions with patients attending our clinics have been carried on for many years. It has been felt for some time that this approach was of doubtful value in many cases. For most of this year, with

some few exceptions, only patients from the younger age-groups presenting with their first infection were interviewed. Improvements in our methods of handling the problems presented by these patients are still necessary and only time will tell whether the efforts made by our staff will prevent these patients from becoming repeaters.

The education of student nurses, public health nurses in training, and practising physicians in the control of venereal infections again took a considerable part of the time of our staff.

Throughout the year three student nurses a week from the Vancouver General Hospital School of Nursing were given an intensive three-day course of lectures, demonstrations, and practical clinical experience, together with a limited amount of field work.

In addition, a total of thirty-two lectures were given by our Superintendent of Nurses at the Schools of Nursing at St. Paul's Hospital, Vancouver, the Royal Inland Hospital, Kamloops, the Royal Columbian Hospital, New Westminster, and the Provincial Mental Hospital, Essondale. Lectures were also given to the students taking practical nursing courses at the Vancouver Vocational Institute by the public health nurse attached to this Division from the Metropolitan Health Committee.

A number of graduate nurses taking their public health nursing diploma course at the University of British Columbia were given a full week of training. Instruction was given in the medical nursing, epidemiologic, social, and emotional aspects of the Division of Venereal Disease Control programme. In addition, a three-day seminar was held, which was attended by a group of public health nursing students who were unable to take advantage of the regular one-week course.

During the year the Director gave lectures and practical demonstrations on the handling of venereal-disease patients to the second-year medical students in the Faculty of Medicine at the University and the Division's consultant in venereology, Dr. S. Maddin, gave didactic lectures to the third-year students on the medical aspects of venereal diseases.

The Director, the clinic social worker, and the public health nurse attached to the Division by the Metropolitan Health Committee visited each health unit in the Metropolitan area during the year and spoke at staff meetings on the part that could be played by the public health nurses in venereal-disease control. An excellent new film was purchased during the year, entitled " Syphilis the Invader," and has been circulated to many city and Provincial health units where it has been very well received.

The purchasing and distribution of all pamphlets and booklets relating to venereal disease and intended for public distribution has been transferred to the Division of Public Health Education.

A start has been made on a full revision of the manual for physicians published by the Division and distributed to all newly registered doctors in the Province.

During the year Dr. G. William Sleath published his paper on the results of his work done in the Division in 1955 on a clinical survey of the relative efficiency of various types of penicillin in the treatment of gonorrhœa.

In December of this year an arrangement was concluded with the Interne Board of the Vancouver General Hospital, whereby each first-year interne in the hospital would spend one full day at the Vancouver clinic of the Division in order to gain practical experience in the diagnosis and treatment of venereal diseases.

REPORT OF THE DIVISION OF TUBERCULOSIS CONTROL

G. F. KINCADE, DIRECTOR

In reviewing the tuberculosis problem to–day, one cannot help but be impressed by the encouraging results that have been achieved in the past ten years. However, these results have been mostly confined to one phase of the tuberculosis programme, namely, treatment. The reduction in deaths from tuberculosis and the saving of lives are well known and, of course, to those suffering from tuberculosis and their families nothing could be of more importance. Still, even in treatment, the greatest benefits from improved methods have accrued chiefly to the younger age-groups.

Prevention, case finding, and rehabilitation have never at any time in tuberculosis-control work deserved more attention than they do to-day. We cannot assume, because of the spectacular results of treatment, that tuberculosis is rapidly on its way out and is no longer a major health problem. The incidence of tuberculosis as shown by the new cases found is only slowly decreasing. The need for education was never more evident and our efforts in vocational rehabilitation are as yet only in their developmental stages.

The rapidly changing picture in tuberculosis control to-day underlines the need for finding those undetected individuals in our population who are suffering from tuberculosis and, being unrecognized, are the source of spread of tuberculosis to those susceptible individuals with whom they associate. Once discovered, tuberculosis is readily treated and the spread of disease can be prevented. When it is unrecognized we are incapable of doing anything about it. This, of course, is not a new concept, but from past experience we are now better able to mobilize our forces to bring these unknown cases to light. These unknown cases constitute the reservoir which will continue to produce new tuberculosis and, unless they are detected, the eradication of the disease cannot become a possibility. Intensive case finding, therefore, is clearly indicated. Moreover, compared to sanatorium treatment, case finding is a relatively inexpensive procedure and the money saved in operating even a small institution would more than pay for the most elaborate case-finding programme that would be necessary for this Province.

CASE-FINDING PROGRAMME

The tempo of the case-finding programme was continued at a high level during 1956. Chest X-rays totalled 387,167 during the year, which represent a slight decrease over the previous year. Three hundred eight thousand one hundred and forty-nine were taken on miniature films in hospitals, survey clinics of the Division, health units, and by the mobile units. Seventy-nine thousand and eighteen standard-size X-rays were taken by the diagnostic clinics of the Division, the hospital admission X-ray programme, and through referred X-rays from outlying centres, which are paid for by the Division. The following is an analysis of these figures:—

Standard-size X-rays

Diagnostic clinics		37,859
Referred films		11,678
General hospital admissions		29,481
Total, standard size		79,018

Survey (Miniature)

General hospitals—		
Admissions	87,236	
Out-patients	28,325	
Total		115,561

Mobile—			
Provincial	36,905		
Metropolitan Vancouver	64,267		
Total, mobile		101,172	
Other surveys—			
Willow Chest Centre	28,539		
Vancouver Island Chest Centre	10,598		
New Westminster clinic	9,621		
Metropolitan Health Committee (stationary units)	41,382		
Health unit at Courtenay	1,276		
Total, other surveys		91,416	
Total, miniature X-rays			308,149
Total, all X-rays			387,167

There were 308,149 miniature X-rays taken, in comparison with 307,090 the previous year, an increase of 1,039.

As it is in most fatal diseases, the mortality rate for many years was the chief index of progress in the fight against tuberculosis. With the low death rates that have now been achieved, this index has become less useful and we are thinking more in terms of the incidence of tuberculosis as shown by the new cases found each year, particularly the new active cases.

The incidence rate for "other than Indians" has dropped from 211.1 per 100,000 in 1946 to 114.3 in 1951, and reached its lowest point in 1955 with a rate of 89.1. The total number of cases reported in 1954 was 1,450, and in 1955 there was a drop to 1,403 cases. These included 646 active cases in 1954 and 587 active cases in 1955. Preliminary figures show that a total of 1,292 new cases of tuberculosis were reported during 1956, of which 584 were active cases. The active cases, of course, are the most significant because of their need for treatment and the danger of infection from them. It is interesting to note that over half of the cases notified each year are in a healed condition.

The basic concepts of case-finding have not changed and it will always be necessary that people be X-rayed to establish a diagnosis of tuberculosis.

Principles of control in tuberculosis do not differ from those used in epidemic diseases, although its insidious nature requires modified techniques. Our problem is to direct our efforts to those individuals and groups who are most likely to be suffering from tuberculosis. Fortunately, over the years, a good deal of experience and a considerable volume of statistics have been accumulated which shed a good deal of light on the problem. Naturally, further information will be required so that our efforts may be refined and pin-pointed.

So as to direct our case-finding efforts along productive lines, a survey-planning committee was formed and has been in operation during the past year. This group represents the clinical, epidemiological, statistical, and organizing experience of those concerned in tuberculosis control. Its endeavour has been to determine the high incidence areas throughout British Columbia and to mobilize our resources for concentrated efforts in those areas. The plan already in operation is to carry our total population X-ray surveys in those communities and to repeat these surveys at short intervals until such time as the findings indicate that the development of new cases has been reduced to a Provincial average. As an integral part of the organization of the X-ray survey a pre-registration of the population is carried out so that those who do not participate in the survey can be

known and later canvassed in a further effort to have them submit to a chest X-ray examination. In this way it is hoped that most of the hard core of these non-participants will eventually be broken down.

As would be expected, case-finding is more productive in some centres than others and the following table shows the case-finding rates of active cases found in selected operations.

Active Cases, 1955

Operation	Examinations	Active Tuberculosis Found		
		New	Previously Diagnosed	Total
Oakalla Prison Farm	5,222	4	16	20 (1 in 261)
Metropolitan Unit No. 1 (Vancouver)	20,214	22	3	25 (1 in 808)
General hospitals—out-patients	28,135	6	13	19 (1 in 1,481)
Metropolitan Unit No. 4 (Vancouver)	7,618	4	1	5 (1 in 1,524)
Courtenay Health Unit	1,603	1	0	1 (1 in 1,603)
Willow Chest Centre	30,072	13	5	18 (1 in 1,671)
General hospitals—admissions	83,852	26	24	50 (1 in 1,677)
Provincial mobile	41,759	22	2	24 (1 in 1,740)
New Westminster clinic	10,362	5	0	5 (1 in 2,072)
Pacific National Exhibition	11,232	4	1	5 (1 in 2,246)
Vancouver Island Chest Centre	9,644	4	0	4 (1 in 2,411)
Metropolitan mobile (Vancouver industries)	63,941	18	6	24 (1 in 2,664)
University of British Columbia	4,668	1	0	1 (1 in 4,668)

The programme to provide a chest X-ray for all patients admitted to hospital in British Columbia continues to expand and four additional miniature X-ray machines have been put in operation. These were in the hospitals at Quesnel, White Rock, Oliver, and Revelstoke. The total number of hospitals so equipped now numbers forty-two, and there are also thirty-seven hospitals doing a routine chest X-ray admission programme using their own equipment and standard-size X-ray films.

The total number of admission X-rays taken in 1956 were 116,717, a decrease of 3,802 over the previous year when 120,519 chest X-rays were taken. The percentage of admissions X-rayed has increased from 40 per cent in 1951 to 61 per cent for the first nine months of 1956 in those hospitals provided with miniature equipment; while in hospitals using their own equipment the increase has been from 40.9 per cent, when this programme was first initiated, to 57.6 per cent in the first nine months of 1956.

Many hospitals are doing an excellent job on this programme and of the forty-two with miniature equipment, eighteen hospitals are X-raying from 50 to 70 per cent of their admissions. In hospitals using their own equipment, fourteen out of thirty-seven are X-raying over 70 per cent of their admissions and another nine are doing 50 to 70 per cent of their admissions. While realizing that it is almost impossible to have a chest X-ray for everybody admitted to a general hospital, on account of the acute nature of some of the conditions for which they are admitted and the fact that many people have frequent admissions and, therefore, do not need repeated X-rays on every admission, every effort is still being made to stimulate the hospitals to do as complete a programme as possible. The benefits of this programme are well recognized in the earlier detection of tuberculosis and in the protection of staff against unrecognized cases. There has been a marked reduction in the incidence of tuberculosis amongst hospital employees in recent years, and a great part of this reduction can be attributed to the admission chest X-ray programme.

ANALYSIS OF HOSPITAL ADMISSION CHEST X-RAY PROGRAMME

Year	Hospitals with Equipment for Taking Miniature Films					Hospitals Taking Standard Films Only		Total Admission X-rays
	Number of Miniature X-rays	Number of Standard-size X-rays	Percentage of Admissions Examined	Active T.B. Found		Number of X-rays	Percentage of Admissions Examined	
				New	Old			
1951	52,919	(1)	40.0	23	19	(1)	(1)	52,919
1953	62,492	6,757	54.5	23	15	11,077	40.9	80,326
1955	83,852	14,068	62.4	26	24	22,599	55.7	120,502
1956[2]	87,236	12,401	63.4	(3)	(3)	17,080	59.1	116,717

[1] Not known.
[2] Preliminary X-ray figures for 1956.
[3] Not yet available.

MORTALITY FROM TUBERCULOSIS

Much comment has been made on the reduction of deaths in tuberculosis since the beginning of the streptomycin era in 1946. It has previously been recorded that the death rates declined from 57.4 per 100,000 at the beginning of this era to 9.7 per 100,000 in 1954. In 1955 there was an increase in death rates to 10.5 per 100,000 and in total deaths from 123 in 1954 to 137 in 1955. Preliminary figures recorded for 1956 show 106 deaths from tuberculosis for a rate of 7.8 per 100,000 population, the lowest yet recorded.

Of the 106 deaths that occurred, only thirty-one were under 50 years of age and only three of these were under 20 years of age. All three were Indians. There were no deaths under 5 years of age. It is not too long since children under 5 years of age were particularly prone to develop acute tuberculous conditions, such as meningitis, and many deaths used to be recorded in this age-group. Seventy-five deaths occurred in persons over 50 years of age, sixty-one being male and fourteen female. Of these deaths, forty-three were in persons over 70 years of age, thirty-seven being male and six female.

The economic implications to the Province in this saving of lives and restoration to health of the younger age-group is of the greatest importance. This represents a tremendous saving in manpower and money, not to mention the alleviation of suffering and saving of the family unit, so often disrupted when young parents are afflicted with chronically disabling diseases such as tuberculosis.

BED OCCUPANCY

The decline in bed occupancy throughout the Division of Tuberculosis Control, which has been apparent over the last three years, continues its downward trend at an almost constant rate, with only a few upward fluctuations. At the end of 1954 the seasonal increase caused a rise in occupancy of forty-seven beds, but the downward trend continued in the spring, summer, and fall of 1955, with an increase of only twenty-seven beds in the first three months of 1956. Since then the trend has continued to be downward with no apparent rise this fall. The bed occupancy was 866 in January, 1954; 757 in January, 1955; 603 in January, 1956; and 536 in November of 1956. This shows a decrease of 330 persons in the beds operated by the Division of Tuberculosis Control in a three-year period. During this time Jericho Beach Hospital was closed, the tuberculosis beds at St. Joseph's Villa were converted to other uses, and at Tranquille the Main Building, and East Pavilion are no longer in use.

In 1954, provision was made for the operation of 935 beds within the Division, while at the present time provision is made for the operation of 672 beds, and this will be decreased to 571 beds at the beginning of the next fiscal year—an over-all reduction

of 364 beds in slightly over three years. This is a reduction of 38.9 per cent. During the year all of the tuberculosis patients have been cleared from Shaughnessy Chest Unit and all those tuberculosis patients who are the responsibility of the Department of Veterans' Affairs are now being taken care of by the Division of Tuberculosis Control.

Bed Occupancy

	Beds Operating	Bed Occupancy
January, 1954	935	866
January, 1955	788	755
January, 1956	680	602
January, 1957	672	499
Budgeted for 1957–58	571	-----

The reduction in bed occupancy at Tranquille Sanatorium has been particularly apparent. There were 341 patients in Tranquille Sanatorium in January, 1954, and in November, 1956, there were 188 patients. The decline in occupancy in that institution has been gradually downward for three years, except in the early part of 1955 when, due to the seasonal increase and the transfer of many patients from Jericho, when it closed, there was a definite up-trend. However, at the present time it is almost impossible to persuade patients from the metropolitan centres of the Coast to go to the Interior for treatment, so that Tranquille is used mainly for patients from the Interior of the Province. With the decreasing numbers of patients in the Interior needing treatment, the occupancy of the institution declines and will apparently continue to do so. The decreasing bed complement at Tranquille has created an administrative problem in staffing the institution. Every endeavour has been made to avoid partially occupied wards and to transfer patients so that wards could be closed and the staff reduced as quickly as possible. In spite of this and because of the impossibility of making much reduction in the maintenance and general upkeep services, the *per diem* rate has increased. However, there has been a marked reduction in the total budget for the institution.

The aging of the population of the sanatoria has for some time been apparent and again this year the percentage of persons in sanatorium over 50 years of age continues to increase. While the total bed occupancy decreased rather rapidly during the past year from 615 to 533 patients, those beds occupied by persons over 50 are showing very little decrease, with the decline being only from 251 to 241. At the present time, 241 of the 533 patients, or 45.2 per cent are over 50 years of age. This has increased from 40.8 per cent in 1955 and from 32.3 per cent in 1952. Only thirty of the 241 patients over 50 years of age are female, representing a ratio of 7 to 1 of males to females. This has decreased slightly from 8 to 1 a year ago and, in fact, there has been a slight increase in the female patients over age 50 from twenty-eight to thirty in numbers. Tranquille Sanatorium has the highest percentage of these older people, with 93 out of 188 patients, or 49.4 per cent, while Pearson Hospital has 101 out of 233 patients, or 43.4 per cent.

Recently a spot check was made of the patients in our institutions to determine how many no longer need institutional treatment for tuberculosis and would normally be discharged if accommodation were available. It was felt that many of the older patients who, although they had some tuberculosis, were suffering from other diseases and conditions that were of much more significance than their tuberculosis and required more care and attention. Having been diagnosed as tuberculous and being very difficult to manage, they were not acceptable to general hospitals and nursing homes, so had been admitted to sanatorium because of a need for medical and nursing care.

Of 536 patients in sanatoria at the time of the survey it was found that thirty-six patients fell into this category. These people were of the older age-group and practically all males. They ranged in age from 58 to 94 and twenty-five of them were 70 years of age and over. Thirteen had positive sputum tests and twenty-three were considered to

be negative. It was felt that ten of these people could be discharged to boarding homes but that twenty-six of them would require nursing-home care.

Out of the 101 older persons at Pearson Hospital it was found that only twenty-seven had been in the institution over a year. There were 100 of the older age-group in Pearson Hospital one year before and of these thirteen had died. This indicates that sixty others had been discharged from the hospital during the year. Actually, there is a considerable turnover in the older-age patients in our institutions and every effort is being made to treat them and restore these patients to their normal activities and surroundings—with considerable success. The increasing number of these cases in our institutions is due to the fact that tuberculosis is now recognized as a serious problem in the older person, with more attention being paid to this group and more cases being found which need sanatorium care.

COMMITTALS TO SANATORIUM

The power of the Deputy Minister of Health to commit to sanatorium patients who are infectious and refusing treatment for tuberculosis has been enforced now for three years. In all, seventeen patients have been committed to our sanatoria, but the order was only used on four occasions in 1956. In one instance the patient made a hasty exit from the Province before the order could be served.

Of the sixteen actual committals, six have been discharged and ten remain in our institutions. Three of the discharges followed successful resectional surgery. One has been discharged to his home on probation when arrangements satisfactory to the local health officer had been provided for the man. Two of the patients who were admitted with very far advanced disease in 1955 died in 1956. At the present time there are seven patients under committal at Tranquille, two in Victoria, and one in Pearson Tuberculosis Hospital. Two of the patients at Tranquille Sanatorium are of necessity confined in a restraining area because of the fact that they will not co-operate and in the past have shown a defiance to the committal order and have left sanatorium without permission. For the most part the other patients are reasonably co-operative and have not shown themselves to be a security problem.

The regulations for the committal of patients have been responsible for many others taking treatment who did not wish to do so. The order is only used as a last resort and every method of persuasion is used to convince the patient of the necessity of treatment before recourse is made to actual committal.

We have been very fortunate that most of those committed have become co-operative after committal, because within the Division there is very little accommodation available to handle patients of this type when they become hostile. There are several patients who are infectious and refusing treatment who would create a real problem in handling if it were not for the fact that they are the criminal element who are no sooner out of a penal institution than they commit another offense and are soon apprehended. This group is completely anti-social and impossible to handle in our sanatoria.

NATIONAL HEALTH GRANTS

The total amount of the National health grant for tuberculosis control in British Columbia is slightly less for the fiscal year 1956–57, being $360,190, as compared with $366,070 in the previous year. In 1955–56, projects were submitted and approved in the amount of $313,070, or 85.5 per cent of the grant. Actual expenditures, however, amounted to $282,738, or 77.2 per cent of the grant. This was due to the fact that it is impossible to estimate accurately the amounts that will be spent in our larger projects, such as payment for admission chest X-rays. We are pleased to report that the under expenditure was not due to delay in delivery of approved equipment.

This year projects have been submitted and approved in the amount of $319,992, or 88.6 per cent of the amount available.

Under the Tuberculosis grant there are eighteen projects with the largest being that for the hospital admission X-ray programme, which covers for the most part payments

for X-ray examinations and provides free chest X-rays for all persons admitted to hospitals in the Province. The total amount of this project is $101,750, of which $90,000 is for the payment of chest X-rays. This fiscal year only one new miniature X-ray machine has been provided, that being in Smithers. Under National health grants throughout the years over a quarter of a million dollars has been spent on the provision of forty-two miniature X-ray machines in hospitals and health centres. All hospitals with over 2,000 admissions a year have been provided with these machines, so that this phase of tuberculosis control is considered to be practically complete.

Other large projects are: $48,000 for the provision of antimicrobials for the treatment of tuberculosis, $34,068 for community X-ray surveys, $41,962 for the provision of staff and equipment at the Willow Chest Centre, and $19,599 for the Rehabilitation Project.

All the projects during the current year have been continuations of projects from previous years, there having been no new projects initiated. Through an extension of the project for staff and equipment for the Willow Chest Centre it has been possible to extend the services of the Respiratory Physiology Department. When this work was first initiated the investigations were confined to the patients of the Division of Tuberculosis Control. The importance of this work was recognized and requests were obtained from general hospitals for investigation of their patients and some were accepted. In view of the fact that this is a highly specialized department, which requires the services of a specially trained physician, as well as specially trained technicians, and with the need for this work increasing in Vancouver, it was felt that the services of this laboratory should be extended to any patient who needed this type of investigation. Moreover, it would not be justifiable to duplicate these services in Vancouver. It has, therefore, been arranged that non-tuberculous patients from other hospitals in Vancouver and, in fact, throughout the Province, as well as out-patients, will be investigated by this department, provided that this investigation will assist in the diagnosis or treatment of their conditions.

Of the total budget, $94,839 has been allocated for salaries of personnel, all within the Division of Tuberculosis Control, except for two nursemaids at the Vancouver Preventorium and four X-ray technicians with the Metropolitan Health Committee.

Under the Professional Training Grant, four nurses were given postgraduate training during the past year and five short-term postgraduate training courses were provided—four for the medical staff and one in the rehabilitation department.

We would again thank all those groups and agencies that have helped so much in carrying on the various phases of activities throughout the Division. Much is contributed in time, money, and effort on the part of innumerable people throughout the Province. Many groups contribute to the comfort and entertainment of patients in all of our institutions. Others assist in the organization and operation of our X-ray surveys and, indeed, the surveys could not be carried on successfully without them. In the voluntary agencies the British Columbia Tuberculosis Society gives strong support in all our endeavours and meets many needs that could not otherwise be taken care of. The Vancouver Preventorium Society provides the only hospital accommodation for the treatment of children suffering from pulmonary tuberculosis. The Canadian Red Cross Society contributes greatly, not only in the blood that is so vital in such large quantities for the type of chest surgery that we are doing, but also in comfort and entertainment to the patients in our institutions.

Many of the official agencies contribute to the operation of this Division and our relationships with them have been of the highest order. Mention should be made of the close co-operation that exists between this Division and the Department of National Health and Welfare through its Indian Health Service, which co-operates so closely and provides such an excellent service in tuberculosis for their wards.

The keen and enthusiastic support and the high level of service that is exhibited by the staff of the Division of Tuberculosis Control is also recorded and much appreciated.

REPORT OF THE REHABILITATION CO-ORDINATOR

C. E. BRADBURY

In planning a programme for the rehabilitation of disabled persons in British Columbia, it has always been considered that two broad areas of development should initially receive close attention.

First, it was felt that it was essential that the existing voluntary and public agencies, particularly in the fields of health, welfare, and education, co-ordinate services for the benefit of the handicapped person who sought rehabilitation.

Second, as rehabilitation is a highly individual process which must be related to the needs of each handicapped person accepted for service, it was felt that a rehabilitation casework programme should be developed so that the patient, once started on the road to personal independence and self support, would not be delayed in his progression from one specialized service to the next.

The experience gained in the last two years has shown these methods of approach are sound. In the past, almost all the special agencies have found that, working alone it was difficult, if not impossible to assist those for whom they were responsible to become independent. It has been notable in this Province that, as the philosophy of co-ordination is recognized, there is a distinctly developing tendency to broaden services and appreciate the value of inter-agency relationships. There is also apparent an increasing appreciation and comprehension of each agency's function in the rehabilitation process and an understanding of each other's capabilities and limitations.

A major part of the responsibility has been to accept individual referrals for rehabilitation service. In June, 1955, a beginning was made to maintain case records in the office of the Provincial Co-ordinator with a modest twelve cases. In the time that has elapsed since that date the number of handicapped persons referred has increased to two hundred and seventy-three. The advantage of maintaining case records has been threefold. First, it has enabled the Rehabilitation Service to obtain and record background information, including the medical history, social and education background, and vocational experience of each referred person for the rehabilitation assessment team to study and make recommendations for a suitable course of action. Second, by case example it is demonstrating the need and effectiveness of teamwork between the various individuals and agencies concerned and, third, it has made possible the planning of a statistical programme from which information can be obtained which will be valuable and necessary for future planning.

The productiveness of a rehabilitation programme is greatly dependent on the proper selection of suitable candidates for subsequent study and attention. However, this statement must be qualified. Proper selection must also be related to the breadth and depth of service available in the community, and as the services broaden, the meaning of proper selection changes. Gradually as services develop, more applicants who present a difficult picture can be considered. A year ago certain applicants would necessarily have been deferred. To-day some are being accepted.

No referrals made directly have been summarily rejected. All have received as close scrutiny and study as possible and many, in our view, have been assisted toward increased mobility and personal independence, but not rehabilitation. It has been considered that a successfully rehabilitated person is one who, as a result of the various integrated services he has received, has been able to obtain suitable gainful employment and is financially self-supporting. Acceptance of referrals, however, is not decided on the basis of a certainty that a successful closure in terms of gainful employment and financial independence will result, but whether the particular service that the individual needs is available.

As a result of following this procedure of establishing a broad basis of acceptance and a narrow criterion for a successful closure a higher standard of service has tended to develop. While some clients have not become either gainfully employed or financially independent, the attention and service they have received has resulted in a greater degree of physical and social independence.

Acknowledgment must be made to the various government departments, both Provincial and Federal, whose assistance has been so important in the development of this programme.

The tangible assistance which has been received from the Federal Departments of Labour and National Health and Welfare through the Co-ordination of Rehabilitation Agreement and the Medical Rehabilitation Grant also is gratefully acknowledged.

REPORT OF THE ACCOUNTING DIVISION

J. McDIARMID, DEPARTMENTAL COMPTROLLER

The functions of the Accounting Division of the Department of Health and Welfare are to control expenditures, process accounts for payment, account for revenue, forecast expenditures, and prepare the departmental estimates of revenue and expenditures in their final form.

During the year monthly statements of expenditure and other information were provided to the various divisions to assist them in keeping to their budgets.

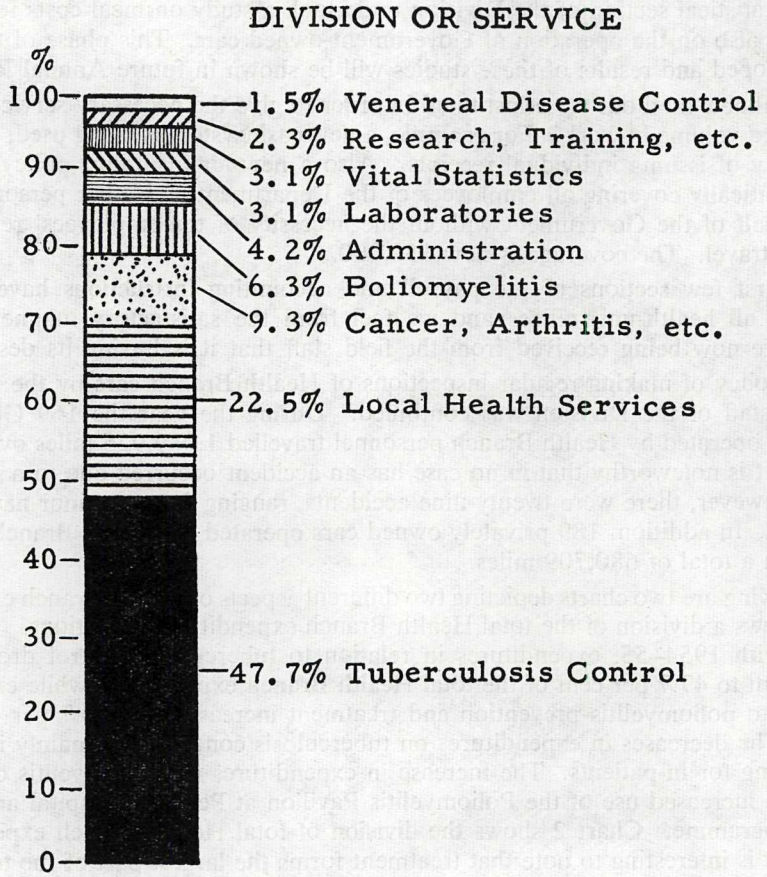
The statistical section of the Division undertook a study on meal costs for the institutions and also on the operation of Government-owned cars. This phase of the work is being developed and results of these studies will be shown in future Annual Reports.

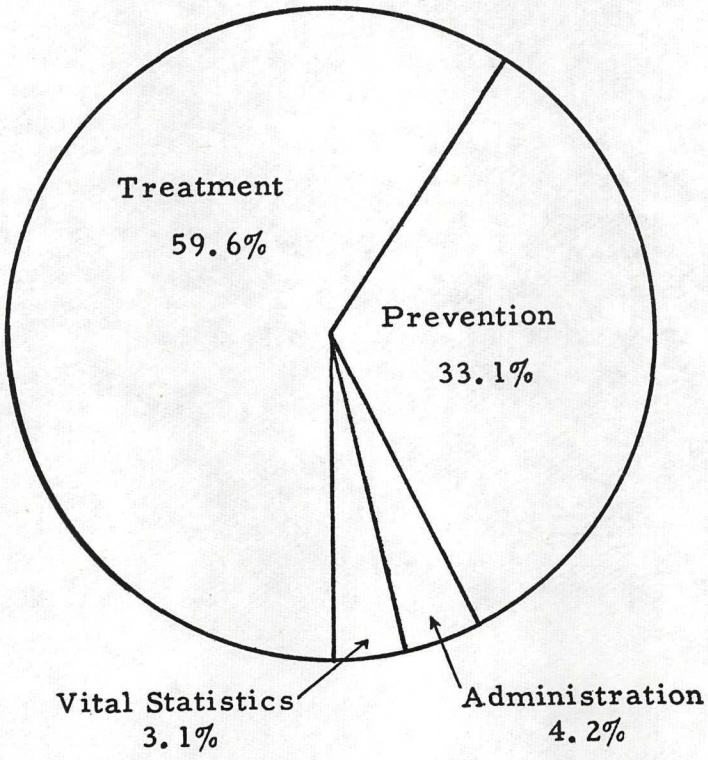
Several new methods were instituted in order to give the necessary service to handle the increased volume in work. For example, a new cash system is being used, eliminating the necessity of issuing individual receipts. Also a new air insurance policy was taken out, automatically covering all employees of the Department and other personnel travelling on behalf of the Government without the necessity of the employees' reporting the amount of travel. The coverage is now $30,000.

The first few sections of the payroll and accounting instructions have been distributed to all health-unit offices and we feel from the satisfactory manner in which accounts are now being received from the field staff that it is having its desired effect.

The policy of making regular inspections of Health Branch cars by the mechanical inspection staff of the Division was continued. During the year the 169 Government-owned cars operated by Health Branch personnel travelled 1,089,926 miles over all types of roads. It is noteworthy that in no case has an accident occurred due to a mechanical defect. However, there were twenty-nine accidents, ranging from a minor nature to two total losses. In addition, 189 privately owned cars operated by Health Branch personnel were driven a total of 680,709 miles.

Following are two charts depicting two different aspects of Health Branch expenditure. Chart 1 shows a division of the total Health Branch expenditure by sections. Comparing 1955–56 with 1954–55, expenditures in relation to tuberculosis control dropped from 52.7 per cent to 47.7 per cent of the total Health Branch expenditure, while expenditures in relation to poliomyelitis prevention and treatment increased from 0.7 per cent to 6.3 per cent. The decreases in expenditures on tuberculosis control were mainly in the institutions caring for in-patients. The increase in expenditures on poliomyelitis came about through the increased use of the Poliomyelitis Pavilion at Pearson Hospital and the Salk vaccine programme. Chart 2 shows the division of total Health Branch expenditure by services. It is interesting to note that treatment forms the largest part of the total Health Branch expenditure, 59.6 per cent, while prevention utilizes only 33.1 per cent.


DIVISION OR SERVICE
%
100
90
80
70
60
50
40
30
20
10
0
1.5% Venereal Disease Control
2.3% Research, Training, etc.
3.1% Vital Statistics
3.1% Laboratories
4.2% Administration
6.3% Poliomyelitis
9.3% Cancer, Arthritis, etc.
22.5% Local Health Services
47.7% Tuberculosis Control



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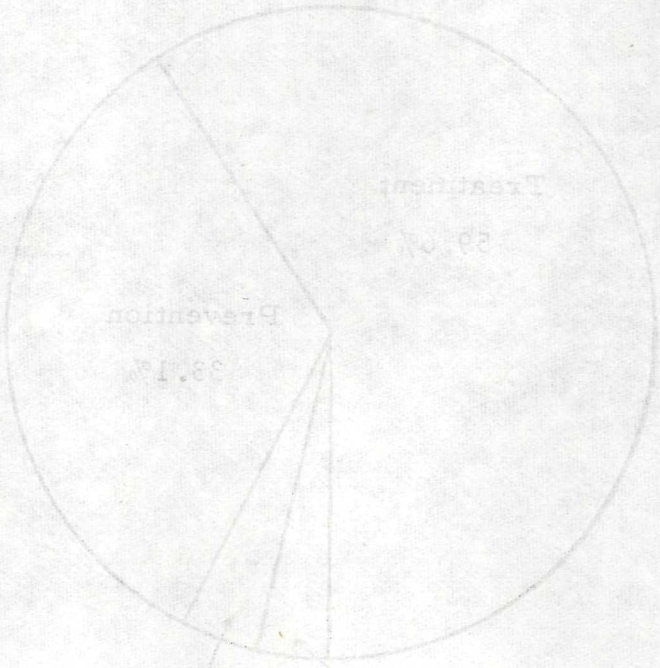
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