PROVINCE OF BRITISH COLUMBIA

Seventy-seventh Annual Report of the

# Public Health Services of British Columbia

HEALTH BRANCH

DEPARTMENT OF HEALTH

YEAR ENDED DECEMBER 31

1973

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1974

## DEPARTMENT OF HEALTH
## (HEALTH BRANCH)

THE HONOURABLE DENNIS COCKE
*Minister of Health*

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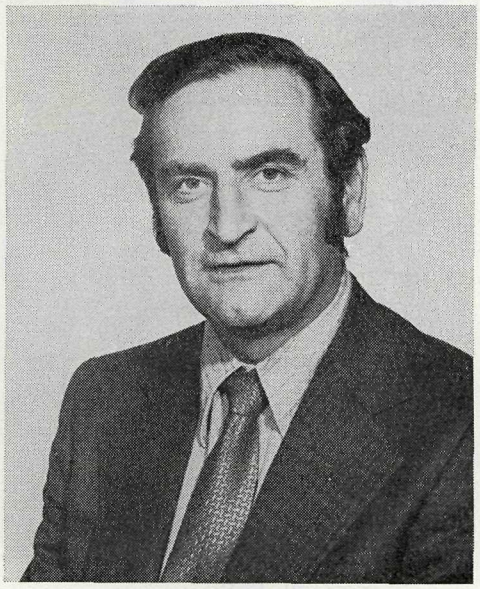
OFFICE OF THE MINISTER OF HEALTH,
VICTORIA, B.C., January 14, 1974.

*To the Honourable* WALTER S. OWEN, Q.C., LL.D.,
*Lieutenant-Governor of the Province of British Columbia.*

MAY IT PLEASE YOUR HONOUR:

The undersigned respectfully submits the Seventy-seventh Annual Report of the Public Health Services of British Columbia for the year ended December 31, 1973.

DENNIS COCKE
*Minister of Health*



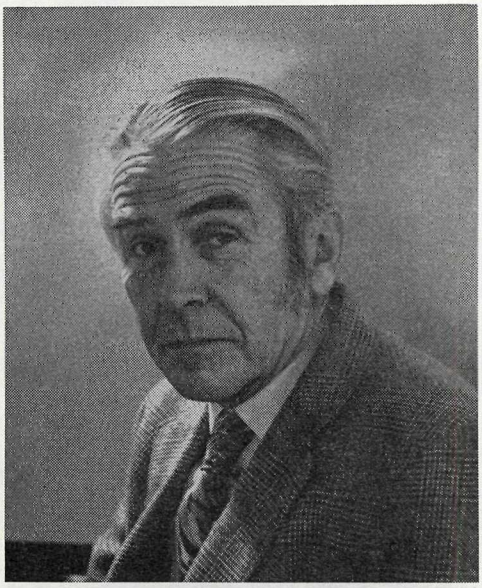
HON. DENNIS COCKE
*Minister of Health*

DEPARTMENT OF HEALTH (HEALTH BRANCH)
VICTORIA, B.C., January 11, 1974.

*The Honourable Dennis Cocke,*
*Minister of Health, Victoria, B.C.*

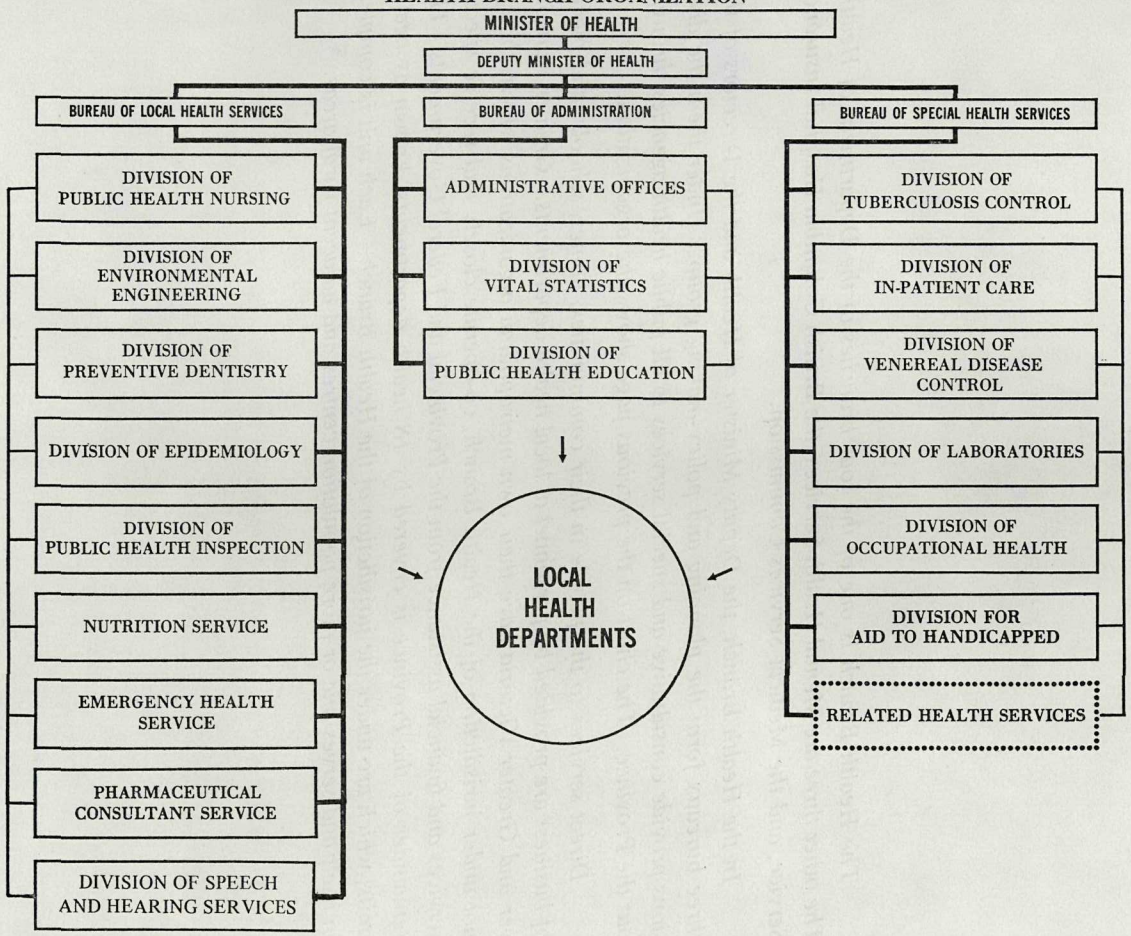
SIR: I have the honour to submit the Seventy-seventh Annual Report of the Public Health Services of British Columbia for the year ended December 31, 1973.

G. R. F. ELLIOT, M.D.C.M., D.P.H.,
*Deputy Minister of Health*



G. R. F. ELLIOT
*Deputy Minister of Health and*
*Provincial Health Officer*

## HEALTH BRANCH ORGANIZATION



*The Health Branch is one of the four branches of the Department of Health. The other three are Mental Health Services, the British Columbia Hospital Insurance Service, and the Medical Services Commission.*

*In the Health Branch, the Deputy Minister of Health and the Directors of the three bureaux form the planning and policy-making group. Under them the divisions provide consultative and special services to all public health agencies throughout the Province. The chart on the previous page shows the organization.*

*Direct services to the people in their communities, homes, schools, and places of business are provided by personnel of local health departments. Greater Vancouver and Greater Victoria have their own metropolitan organizations which, though not under jurisdiction of the Health Branch, co-operate closely and receive special services and financial assistance from the Provincial and Federal Governments. The remainder of the Province is covered by 18 health departments, known as health units, which are under the jurisdiction of the Health Branch. Each unit is complete in itself and serves one or more population centres and adjacent rural areas.*

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# Seventy-seventh Annual Report of the Public Health Services of British Columbia

## HEALTH BRANCH

### Department of Health

### YEAR ENDED DECEMBER 31, 1973

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For many years our Canadian health programmes have concentrated on facilities and activities designed to cure illness. There has not been sufficient support of programmes designed to determine the root causes of illness and death and to reduce these to the lowest levels possible. This statement has been made again and again by public health authorities throughout the world. Unfortunately, its very repetition has probably caused it to lose some of its desired impact. In any event, the fact remains that, for every "pound of cure" we have provided, we have made available only an "ounce of prevention."

The year 1973 was, however, noteworthy for a significant increase in the public health services of a preventive nature rendered to the people of the Province. New programmes were instituted and many existing programmes were extended.

To provide for orderly development and to ensure maximum co-ordination, the Minister of Health held formal meetings, usually at weekly intervals, with the heads of the four branches of the Department. With the same ends in view, the Minister and his four senior officers also held frequent meetings with official representatives of the medical profession.

Throughout the year the Health Security Programme Project under the direction of Dr. R. G. Foulkes, who was commissioned late in 1972 to undertake the study, continued its work. This included many meetings and discussions with members of the Health Branch staff. Dr. Foulkes submitted his report in December 1973.

The important subject of health manpower received much attention in British Columbia (and in other parts of Canada). In co-operation with Federal officials, the subject has been under active review for several years, but in 1973 a Health Manpower Working Group was established on a firm basis in British Columbia. This group consists primarily of representatives of the Departments of Health and Education and serves as an advisory committee to the Minister. It considers the need for various kinds of health workers (physicians, nurses, pharmacists, dentists, orderlies, etc.), the ability of the present training facilities to produce the required members, standards of training, and licensing procedures. These matters are of great importance in the development of health care delivery systems.

Late in 1973 a most successful meeting was held in Vancouver to discuss physical fitness and health and to demonstrate certain proposals in this field. In attendance were representatives from many parts of the Province. These included teachers, nurses, recreation leaders, members of university schools of education, physicians, nutritionists, and many others who could learn from or contribute to the meeting.

As a result, there are to be developed in 1974, under the name of "ACTION B.C.," many community-based programmes which will deal with physical fitness and health.

As in 1972, acupuncture continued to occupy a good deal of public interest in the Province. There is no single subject which received more attention in letters received by this Department.

As a result of this interest, a special study of acupuncture is being financed by the Provincial Government through the Department of Health. It is under the direction of the Professor and Head of the Department of Anæsthesia at the Vancouver General Hospital and the University of British Columbia. Another special study is being conducted under the Medical Director of the Canadian Arthritis and Rheumatism Society (B.C. Division). It is also supported financially by the Provincial Government.

In 1973, following a special survey carried out by Dr. Donald Williams, of the Faculty of Medicine, University of British Columbia, specific recommendations were made that a British Columbia Cancer Control Agency be established. This Agency has now been established by Order in Council, and a Board of Trustees consisting of 15 members has been appointed.

In addition to this, there will be appointed a Provincial Advisory Committee which will have 30 members representing occupational groups, regional committees and agencies, and institutions and organizations with special interests and responsibilities in cancer care and control.

The Health Branch continued to enjoy excellent relationships with the Canadian Armed Forces in the transportation of seriously ill or injured persons. In 1973 there were 115 mercy flights carried out using either fixed-wing aircraft or helicopters from the Armed Forces base at Comox.

During the latter part of 1973, there were an additional 16 mercy flights carried out using the Provincial Government's new aircraft. In many of these flights, medical personnel and equipment were supplied by the Canadian Armed Forces. With the planned purchase of additional aircraft by the Province, there will probably be an increasing number of flights using Provincial planes and Canadian Armed Forces medical personnel.

The Canadian Coast Guard was also used in a few mercy flights.

In the latter part of 1973 a pilot plan was introduced for air-ambulance services from Stewart to Prince Rupert or Terrace. In this, an arrangement was entered into with a commercial air-line whereby the patient makes a small payment, with the Province paying the balance. Other isolated settlements requiring similar services will now receive study.

For many years the operational and financial responsibility for public health services in the Greater Victoria-Saanich area (School Districts Nos. 61, 62, 63, and 64) has been divided between the Provincial Government and the Greater Victoria Metropolitan Board of Health. Many efforts have been made to simplify and improve the administrative arrangement. During 1973 the efforts were increased. By the year's end the interested parties had reached an agreement whereby the responsibilities would be transferred to the Regional Board.

Although the situation in respect of communicable diseases was in general satisfactory, two of these merit special mention. The rate for gonorrhœa continued to increase and there is concern about society's ability to control the spread of this disease. There was also a marked increase in the number of cases of diphtheria. In connection with this disease, public health authorities observe that there has been a drop in the number of children who have been immunized by the time they enter school. Immunization is the most productive and efficient method for controlling diphtheria.

The Health Branch, along with several other departments and branches of the Provincial Government, participated in a programme to employ additional persons, mostly students, during the summer months. In the Health Branch, approximately 697 persons were employed for varying lengths of time during the period from May to September. This enabled the individuals to earn money and made it possible for the Health Branch to undertake many productive activities which it could not otherwise have done.

At the Fall Session of the Legislature, the name of the health ministry was changed from "Department of Health Services and Hospital Insurance" to "Department of Health." The four components of the Department remained as stated earlier in this Report.

The details of the events, trends, and programmes are presented in the narrative sections on the following pages and in the tables which appear at the end of the volume.

## THE PROVINCE AND ITS PEOPLE

The population of British Columbia in 1973 continued to increase at a high level of about 3 per cent a year. The number was estimated to be 2,315,000 in the Province at the mid-year, 68,000 more than in 1972 and the greatest increase over the previous year for any province except Ontario. The area of the Province is given in the 1971 census as 344,000 square miles and the density of population, 6.3 persons per square mile. However, topography, climatic factors, and economic conditions all combine to encourage a high proportion of the population to live in the southwestern portion of the Province, and the scattered distribution of the remainder created problems in the provision of service. Details on the vital statistics for the population follow:

- While the number of births in the Province in 1973 was at about the same level as in 1972, the population growth increased at an even greater rate, with the result that the birthrate declined slightly to 15.2 per 1,000 population from the rate of 15.4 in 1972. The proportion of these births that were illegitimate (11.3 per cent) was substantially the same as for 1972.
- The marriage rate per 1,000 population in 1973 was 9.7, a continuation of the fairly high rates of recent years.
- The 1973 death rate in the Province was 8.1, only slightly above the record low rate of 8.0 for 1972.
- Mortality per 100,000 population from heart disease declined to 268 from last year's figure of 274. There has been a substantial decline in the heart disease deathrate since 1964 and it is encouraging to have this year's rate give evidence of a continuation of this trend.
- The rate of death from malignancies per 100,000 population in 1973 was 151, about the same as in 1972 and thus among the low rates of recent years.
- Deaths from cerebrovascular lesions in 1973 were 77 per 100,000 population, compared with 89 in 1972.
- Unlike the first three causes of death, accidents took an increased toll of lives in 1973. The rate per 100,000 population increased to 80, compared with the 1972 figure of 76.
- Of particular concern is an increase of about 20 per cent in the number of motor-vehicle accident deaths. In 1972 they represented 37 per cent of total accidental deaths. In 1973 the figure was 42 per cent.
- Falls caused about the same proportion of accidental deaths in 1973 as in 1972, 16 per cent.

- Poisoning deaths declined from 16 per cent to 13 per cent of total accidental deaths.
- There was an increase in the suicide rate from 16 per 100,000 in 1972 to 18 in 1973.
- There were 16.6 infant lives lost per 1,000 live births in 1973, compared with 16.1 in 1972. This increased rate of deaths was a result of larger numbers of deaths from complications of pregnancy and childbirth and from malformations, particularly of the circulatory systems. Immaturity took somewhat fewer infant lives in 1973 than in the previous year.

# COMMUNICABLE AND REPORTABLE DISEASE *

The incidence of diphtheria, which has been slowly increasing since 1967, increased sharply this year with 51 cases of clinical disease being reported, all but three from Vancouver Island. In the spring an outbreak occurred at Port Alice, chiefly affecting the native Indian population, and in the early part of the summer an outbreak of larger proportion took place in the Greater Victoria area, with 25 cases reported.

In addition to these cases, 180 healthy carriers of virulent diphtheria bacilli were identified.

- A full course of immunization in infancy and reinforcing immunizations during childhood will provide good individual protection and a high level of immunity in a community which will prevent serious epidemics of diphtheria.
- The number of reported cases of streptococcal throat infection and scarlet fever increased from 454 in 1972 to 836 this year, which may well mean that this cyclical disease is again on the increase and that the incidence of rheumatic fever, which is a frequent complication, will also begin to rise.

## RUBELLA VACCINATION PROGRAMME

Only 77 cases of rubella were reported this year, compared with 1,168 cases in 1971, the year in which rubella vaccine was first made available to all children in the Province. Rubella is a cyclical disease and the full value of the vaccination programme cannot be assessed for at least five years. The early results do, however, seem to be impressive.

Rubeola still continues to occur despite the fact that an effective vaccine has been available at all public health clinics for several years. One hundred and fifty-five cases were reported this year, most of which would not have occurred had the children been vaccinated.

## RHEUMATIC FEVER PROPHYLAXIS

The number of children receiving free antibiotics from the Health Branch to prevent recurrence of rheumatic fever again decreased slightly and now stands at just under 900.

## TUBERCULOSIS CONTROL

In 1972 there were 566 new active cases of tuberculosis diagnosed. This represented an increase of 51 cases over 1971. In part, at least, this increase involved persons of non-Canadian origin.

Case-finding in general hospitals continues to provide the largest number of active cases. In 1972 these hospitals accounted for 48 per cent of the total. In 1973 the use of survey miniature X-rays in areas where such a service was not available was planned but did not prove to be as successful as it was hoped. The number of X-ray-equipped buses has been reduced to one, primarily used to X-ray commercial workers at the request of the employers and also university and college students with positive skin tests. The other bus has been used as an educational vehicle and was involved in an antismoking campaign at the Pacific National Exhibition.

* *See* Table VI.

There was little change in the number of admissions to institutions, but a gradual reduction in bed occupancy is noted. This is attributed to the policy of discharging patients earlier. Patients are now discharged after their sputum smear has converted from positive to negative, provided they have demonstrated reliability in following antimicrobial therapy on an out-patient basis.

There was a continued increase in the number of cases where three antimicrobials were prescribed. The use of PAS (para-amino-salicylic acid) is gradually being eliminated in favour of ethambutol. The use of Rifampin as a first-line drug remains restricted, partially because of high-cost.

Seventy-two per cent of cases with active pulmonary tuberculosis had confirmatory bacteriological results. As stated earlier, there is a high incidence among non-Canadian born individuals. Persons of East Indian, Chinese, and Japanese origin constitute 19 per cent of the total active cases. A determination of incidence rates with the groups indicates that the rate of tuberculosis among East Indians is higher than for any other ethnic group.

The travelling clinic practices have been changed. Formerly, the travelling clinician was accompanied by an X-ray technician who X-rayed all the patients attending the clinic. Now, patients are instructed to attend the local hospital for chest X-rays, which are sent to Willow Chest Centre to be read and subsequently taken out on clinics. This provides X-rays of better quality and increases the efficiency of the clinics. The new arrangement appears to be functioning well.

There were 14 deaths due to active tuberculosis in 1973. This gives a rate of 0.6 per 100,000 population for the Province. The 1972 figure was 19 for a rate of 0.8.

## VENEREAL DISEASE CONTROL

Venereal diseases are diseases which are usually contracted through sexual intercourse. Of the five diseases classified as venereal, only gonorrhœa and syphilis occur to any extent in this Province. Gonorrhœa is very prevalent, with 8,970 cases reported in 1973. Syphilis is much less common, with 100 cases of infectious syphilis being reported in 1973 (*see* Table VII).

There were changes in control practices during the year. In order to provide a rapid interviewing and contact tracing service, V.D. Control nurses were organized into teams—one for interviewing, and the other for contact tracing.

The Microhemagglutination Assay for Treponema pallidum (MHA-TP) test is now used to assist in the diagnosis of syphilis. This test does not stay positive for a lifetime as does the present FTA-ABS test and, therefore, gives a measure of recency of infection.

A grant was given to the Vancouver City Health Department to continue the operation of a free clinic for youth.

In 1973 there was again an increase in the incidence of venereal disease. The incidence of the disease continues at a high level because it is spread by people who do not know they are infected. Every patient diagnosed as having a venereal infection must be regarded as being the centre of a group of sexual contacts, many members of which are asymptomatic. Control of venereal disease is possible when the Health Department is informed of every case and when the physician or Health Department identifies, locates, and treats sexual contacts.

Many patients tend to protect their sexual contacts, and so encourage the spread of the disease. A health educator has been added to the staff of the Division to develop educational programmes to inform people how to assist in the control of venereal disease.

### Infectious Syphilis

Infectious syphilis continues to be brought into the Province by sick mariners, male homosexuals returning from other cities, single men returning from Mexico and Europe, and transient youth coming from the United States. The control programme involves diagnosing the case and identifying the sexual contacts and the sexual partners of these contacts. The infection is eliminated by treating all as though they were infected with syphilis.

### Latent Syphilis

One-third of the people who acquire syphilis have no symptoms of the disease. These asymptomatic carriers of the infection are considered to have "latent syphilis" and can only be diagnosed by a blood test. The Provincial Laboratory conducts over 600 blood tests a day, tests being done to all blood donated to the Red Cross and to all patients admitted to veterans' and mental hospitals. Patients infected with syphilis may have serious late complications, and these can be prevented by providing treatment.

### Gonorrhœa

Gonorrhœa is a specific bacterial infection usually limited to the genital tract. It has an incubation period of two to nine days and causes a burning pain and discharge in the male. Five per cent of males infected with gonorrhœa are asymptomatic carriers and 80 per cent of women infected with gonorrhœa are asymptomatic carriers. These people unknowingly spread the disease, so it is essential that the sexual contacts must be identified and treated. The disease is spread usually by young single people, the average age of females being 20 and males 22 years. In addition, the disease is prevalent in alcoholic women, prostitutes, male homosexuals, and alienated youth.

### General

Diagnostic and treatment clinics are maintained in New Westminster, Victoria, Prince Rupert, Dawson Creek, Prince George, and Kamloops. In addition to the main clinic at 828 West 10th Avenue, Vancouver, the Division operates a clinic every afternoon in the downtown area at 306 Abbott Street, a Wednesday evening clinic at Gordon House, 1086 Davie Street, a Monday evening clinic at the East End Clinic, 2610 Victoria Drive, and clinics at the Vancouver City Gaol and Oakalla Prison Farm. The Kitsilano Community Health Centre Society holds a free clinic at 1952 West Fourth Avenue. The Vancouver Health Department holds a clinic at 2333 Pine Street, Vancouver.

## THE PUBLIC HEALTH NURSE AND DISEASE CONTROL

The public health nurse played an active role in the disease control programmes and provided the following services (*see* Table VIII for details):

- 484,465 individual immunizations and 21,889 tests were given at neighbourhood clinics, child health conferences, schools, and kindergartens. This represents a minimum saving to the British Columbia Medical Services Plan of just over $1 million (based on a rate of $2 per injection).
- 21,336 visits were made to patients and contacts concerning tuberculosis, venereal disease, and for the epidemiological investigation of other communicable diseases. This includes prophylactic injections for infectious hepatitis, and supervision of children on the rheumatic fever prophylaxis treatment.

# HEALTH AND OUR ENVIRONMENT

Work under this main heading is carried out by the Division of Environmental Engineering, the Division of Public Health Inspection, and the Division of Occupational Health. The reports of the three divisions are given separately as follows:

## ENVIRONMENTAL ENGINEERING

Engineers in the Health Department are involved in many phases of health-orientated engineering. The duties of the Division are in seven distinct categories, the highlights of which are as follows:

- *Waterworks*—All community waterworks systems serving more than two dwelling units required approval under the *Health Act,* and 633 certificates were issued during 1973 with appropriate notification being made to health units, Municipal Affairs departments, Highways Department, Water Rights Branch, and the Public Utilities Commission.
- *Sewerage works*—Four certificates of approval were issued during the past year. A major portion of the time of the Division is spent on reviewing the entire range of pollution control applications for effluent discharges.
- *Solid wastes*—The Division's work in this connection is limited to advice to medical health officers and their staff, consulting engineers, and municipalities. All pollution control applications for refuse permits are reviewed by the Division. Direct assistance to municipalities and regional districts was offered throughout the year.
- *Swimming-pools*—A new concept for pool approvals was introduced in January 1973. The Division is responsible for the review of all new pools and communication was maintained with pool designers and consulting engineers. Because pools are technically complicated, some plans require several reviews before final acceptance. Engineers reviewed and approved 79 swimming-pools during the year.
- *Sanitation*—Sanitation problems are becoming increasingly technical. The standard "no moving part" septic tank is making way in many cases for the mechanical treatment plant. In 1973, environmental engineers gave more time to consultations on the technical aspects of many sanitation problems.
- *Operator training*—The engineers were responsible for the training of water and sewerage works operators in British Columbia, with one of the staff acting as co-ordinator of operator training. Environmental engineers were directly involved with the co-ordination of the annual British Columbia Water and Wastes School.

The Division concluded another successful training programme for swimming-pool operators at 10 centres throughout the Province in 1973. Fifty per cent of the Environmental Engineering staff was delegated to prepare and offer lectures for the benefit of the public.

### SERVICE TO HEALTH UNITS

A prime consideration of the Environmental Engineering Division is to offer technical and professional advice to the medical health officers and staff. This year the engineers made 101 visits to the health units, about the same number as in 1972.

During these visits and at other times, engineers examined 14 subdivisions, 89 swimming-pools, 74 waterworks systems, seven solid waste disposal areas, 23 sewage-treatment plants, and two fluoride installations. In addition, 90 miscellaneous visits such as private sewage-disposal systems, manufacturing plants, etc., were made.

Environmental engineers made 26 visits to municipalities and eight visits to consulting engineers' offices. These visits did not include meetings with municipal officials or consulting engineers at other locations.

## PUBLIC HEALTH INSPECTION

The Division of Public Health Inspection was involved in a wide variety of activities during 1973 (*see* Table IX). These activities are summarized as follows:

### Advisory Committee on Food Safety

The Executive Secretary and Co-ordinator for the Advisory Committee on Food Safety Assessment of the Health Protection Branch, Ottawa, set up a committee to attempt to compile data on the status of health hazards of the food supply and the total resources available to control these hazards. The Director of the Division of Public Health Inspection was appointed to act as their contact officer in British Columbia for the purpose of obtaining information for the Advisory Committee. A questionnaire was circulated to local health units and other agencies on the subjects of food-handling activities, areas of responsibility, resources, research work, and legislation.

### Camp-sites

An amendment was made to the Camp-sites Regulations to allow issuance and renewal of interim permits. This requires the posting of the permit in a conspicuous place on the premises.

### Land Use

Public health inspectors were actively involved in subdivision control and the issuing of permits for private sewage-disposal systems. These activities involved them in close liaison with regional districts, Department of Highways approving officers, and other Provincial resource departments. Medical health officers and public health inspectors were represented on intersector committees with local representatives of other agencies and participated in a number of resource use studies.

### Regulations

An Order in Council approved February 2 and amending the Food Premises Regulations gave authority to medical health officers to issue interim permits covering restaurant and catering establishments which may not qualify for an annual permit. In order to obtain any permits, an operator must satisfy the medical health officer that he has sufficient knowledge of modern food handling and adequate equipment to enable him to operate in a safe and sanitary manner.

Restaurant permits issued during the year totalled 5,258, with 47.5 per cent of the premises covered by full permits and 48.5 by interim permits. The total coverage to date is 96 per cent. This represents a considerable increase in 1973 in the coverage of restaurant and other food premises throughout the Province.

An emergency recall system has been set up in the Province of British Columbia in co-operation with the Health Protection Branch of the Department of National Health and Welfare whereby a product considered dangerous to the health of the public may be removed from the shelves of all food outlets immediately.

### Educational Activities

The Division of Public Health Inspection worked with the Division of Public Health Education and students employed under the summer employment programme in the preparation of six general information and in-service video tapes on safe food handling and sewage disposal for television viewing audiences throughout British Columbia.

Because of the large number of Chinese involved in the food service industry, the Managers' Manual on safe food-handling methods has been translated into Chinese. The Chinese version of the manual provides still another means of assisting those who have a limited knowledge of English.

Food-handler training programmes were undertaken by local health units individually and also in co-operation with the Department of Education and the Canadian Restaurant Association.

The Division of Public Health Inspection, together with the Radiological Section of the Division of Occupational Health, co-ordinated regional seminars to instruct public health inspectors on the use of microwave testing equipment. Guidelines were prepared for the safe operation and maintenance of microwave ovens.

### Personnel

Nine public health inspectors were added to the staff during the year, enabling several health units to provide a more efficient service. The total number of Provincially employed public health inspectors now stands at 80.

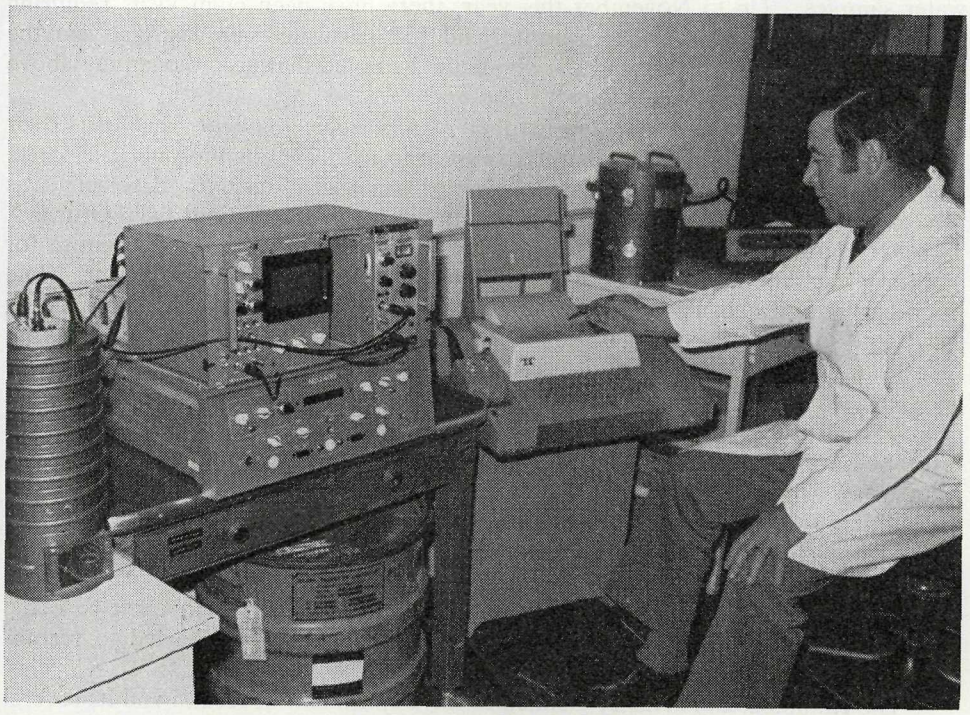
### Summer Student Project

The summer employment programme assisted the health units in carrying out research, surveys, and educational programmes. A few examples are given below:

- A laboratory technician was employed by one health unit to assess variations in results obtained in testing done by the membrane filter technique (Millipore) in the health unit and those results obtained by the Provincial Laboratory. Over 1,200 water samples from 32 beaches were processed.
- Several sewage surveys were completed to determine the number of malfunctioning septic tank system and determine methods of improving the situation.
- Several watershed surveys were undertaken for the purpose of obtaining water analysis data pertaining to the bacteriological and chemical qualities of water.
- Surveys of recreational areas, such as camp-sites, swimming-pools, and bathing-beaches, were undertaken.

## OCCUPATIONAL HEALTH

The Division of Occupational Health carried out its main activities during 1973 in health services for Provincial employees, and radiation protection. In addition, consultative and liaison services were maintained with local health units, the Pollution Control Branch, the Interdepartmental Pesticide Committee, the Workmen's Compensation Board, and other agencies. Also, specialized information on health in relation to the occupational environment was made readily available to private industry and individuals on request.



Radiation—Electronic equipment used by Radiation Protection Section for the detection and identification of radioactivity from wipe tests of Nuclear Laboratories, industrial radiography departments, and other users of radioisotopes.

## Radiation Protection Section

Sources of radiation from the environment and from man-made emitting devices in the Province are of increasing concern as they continue to grow in size and number.

There has been an increasing demand for consultative services for advice in the safe use of various radiation-emitting devices as they proliferate more and more throughout industry and commerce. Surveys under the *Medical Services Act* accreditation programme account for the large X-ray survey total, 762 investigations having been conducted during the year, of which 572 were of X-ray units, 128 of radio-isotopes, 50 of microwave ovens, and eight of nuclear submarines. The comparable figure for such investigations in the previous year was 487. The demand for these services continues to exceed the facilities available. There were 198 on-site consultations for industry and private concerns, compared with 175 last year. Six hundred and twelve telephone consultations were held during the year, the previous year's figure being 422.

Environmental air studies for radioactivity were increased this year at "TRIUMF," the cyclotron facility being constructed at the University of British Columbia. A formal programme of surveys on microwave ovens was launched this fall with training seminars being held throughout the Province for health inspectors at various health units. So far, the seminars have been conducted in the southern half of the Province only.

There was a marked increase in the number of visits from American nuclear submarines to Esquimalt and Nanoose. These required monitoring of air and sea-

water samples. Up to November this year, there have been eight visits requiring a radioactive analysis of 459 air samples and 132 sea-water samples; last year the comparable figures were 301 and 70. It should be noted that no radioactivity above background levels was detected.

There was an increase in the number of reportable incidents that caused or could have caused excessive radiation exposure to operators or the public at large. For example, a badly leaking radium source stored in a citizen's basement was discovered. This has been sealed and is awaiting disposal instructions from Ottawa.* Two very large shipments of radioactive cobalt destined for Japan were cause for alarm. One shipment was reported as overheating during trans-shipment, while the other had an unusually high reading recorded by the monitor, but this reading was found to be incorrect.

In another incident, a radioactive contaminated railway car filled with other goods was discovered while being unloaded. The situation was investigated and proper work practices instituted. In one instance, a radioactive medical source was lost when a medical clinic was destroyed by fire. This was not reported until a routine survey was done several months later and further investigation revealed that the building-site had been cleared and trucked to a sanitary landfill dump. A survey of the dump showed no dangerous level of radiation in the environment.

There were reports of several operators of radiation-emitting devices suffering excessive exposure as recorded on their film badge monitors. In each case the exposure was below the harmful level and subsequent investigation led to recommendations for corrective action.

The Radiological Advisory Council to the Department of Health and its several committees have had a number of meetings and several visits to hospitals throughout the Province took place. The council's work is primarily concerned with planning for equipment and utilization of X-ray equipment in acute general hospitals. Recommendations for proposed regulations on radiation safety were made.

The Radiation Protection Section continued to carry out inspections for the Atomic Energy Control Board for British Columbia. This entails surveys and consultations with the 401 licensed users of radioactive sources in the Province of British Columbia.

## SPECIALIZED COMMUNITY HEALTH PROGRAMMES

The Health Branch is responsible for the maintenance of a number of specialized programmes designed to help various sections of the community. These include people afflicted with a specific and sometimes rare disease, and elderly people and very young children requiring special care for a variety of reasons. Motor-vehicle and poisoning accidents are also covered by special programmes.

A summary of these is as follows:

### KIDNEY FAILURE CORRECTION PROGRAMME

This programme provides artificial kidney equipment, drugs, and supplies to patients who are trained to dialyse in their own home. The technical improvements to reduce blood clotting have required surgery to establish arterial venous fistulas and have necessitated retraining of the patients. This programme has been com-

* The sealed container was sent to Ottawa at the end of December.

pleted at St. Paul's training centre and is currently being done at the Vancouver General Hospital training centre. This retraining has reduced the number of patients being prepared for home dialysis. There are 75 patients on home hæmodialysis, an increase of nine in 1973. It costs an average of $250 a month to maintain a patient on home hæmodialysis. Three hospitals have training centres to prepare patients for hæmodialysis—St. Paul's and the Vancouver General Hospital in Vancouver, and the Royal Jubilee in Victoria. Two support centres are located at Kamloops and Trail.

Some patients are not suitable for home dialysis and they are maintained on peritoneal dialysis. These numbered 12 in 1973, a slight reduction from last year's figure. The method of peritoneal dialysis is still laborious and time consuming and relatively expensive. This form of treatment costs over $600 a month. Machines which will automate the procedure and use a much less expensive concentrate have been developed and are in the testing stages. It is anticipated that they will soon be in production.

By the time many patients have reached the end stages of kidney failure, they have been unhealthy for a long period of time, have been unable to be employed, and have depleted their resources. When they are placed on an artificial kidney they are able to lead relatively normal lives except for the long time involved for the period of dialysis, which is usually 25 to 30 hours a week. In order to encourage patients from out of town to take the home training, the patient may be allowed expenses of $8 a day for the month's training, and the patient's spouse allowed an additional $4 a day for the necessary two weeks training, plus transportation costs from their home to the city. Wherever possible, patients are encouraged to take vocational training in order to obtain suitable employment.

Not all patients can be trained for dialysis in the home, so it may be necessary to supply some patients who are treated in hospital with drug subsidies. Such patients numbered 52 in 1973, compared with 48 in 1972. The amount of the drug subsidies was $3,000, and transportation subsidies totalled $6,000 in 1973.

A warehouse is maintained to provide concentrate and supplies to home patients. These had been supplied through the training hospitals, but are now being provided directly by the Service. A parts department to supply machines and parts has been opened. The pharmacy has been expanded and now supplies drugs to home patients. A nurse has been employed and, when her training is completed, she will visit home patients to ensure their technique is satisfactory, that they are receiving their supplies and drugs, and that community services are used to provide the necessary financial assistance and training.

This Service operates with the assistance of three committees. A committee of physicians appointed by the Medical Association is a consultant committee to recommend policy to the Minister of Health. Another committee of nurses and technicians makes recommendations concerning the equipment and supplies to be used. A third committee consists of social workers from the hospital training centres and advises on the social needs of the patients.

## POISON CONTROL PROGRAMME

No additional hospital-based poison control information centres were established in 1973. Staff were kept very busy, however, revising the existing information and preparing more information cards on the many new potentially toxic products coming on the market.

The poison information cards prepared for the British Columbia programme are now also used in Saskatchewan hospitals and are being considered for use in Nova Scotia and the Yukon.

## HYPOGAMMAGLOBULINEMIA PROGRAMME

Seven more children were accepted on this programme during the year, making a total of 17 children and adults who are now receiving regular injections of immune serum globulin on a monthly basis.

A number of applications were rejected because the advisory committee to the programme did not feel that the medical indications for using this product were sufficient to justify offering it on a life-long basis.

## COMMUNITY CARE FACILITIES LICENSING

The *Community Care Facilities Licensing Act* was amended this year to permit a number of significant changes. The licensing board is now able to issue permanent, rather than annual, licences. The board can now also insist on organized activity programmes in licensed homes for elderly persons, and minimum standards of training for the operators and staff in all community care facilities. Regulations setting new minimum standards will be ready early in 1974.

All statistical information available on licensed facilities has been placed on computer punch cards so that it is readily available for study, and the data on file about qualified pre-school supervisors are being coded.

As well as dealing with complaints and requests for the licensing of new facilities, the board staff is undertaking an increasing number of field visits to provide consultative service to the public health staff who carry out the routine inspections and supervision of licensed facilities.

In several areas, where there are a great number of licensed community care facilities, the Province provided the medical health officer with additional professional assistance so that licensed facilities can be supervised better.

Plans are under way to transfer the board's licensing responsibilities to local authorities, following which the board will assume the function of a Provincial appeal board, and serve as a co-ordinating body in the field of community care between the Departments of Health, Human Resources, and Education.

There was a tremendous increase in the number of day-care centres established throughout the Province in 1973. This was brought about primarily by new Provincial grants and financial assistance to parents who needed this type of care for their children. The increase resulted in a shortage of qualified supervisors and made it necessary to approve the employment of persons who did not complete their training period.

Several short courses were given for operators of personal care homes for the elderly, and one community college is planning to offer a training course for operators and staff of personal care homes on an experimental basis. When courses such as this become generally available, they will be a requirement of licensing.

## INTERMEDIATE CARE FACILITIES

The Government has accepted the principle that there is an unfulfilled need in the health care facilities in the Province. This relates to the great many older people who, because of the physical or mental conditions associated with aging, require somewhat more care than is available in personal care homes but do not qualify for the full-time nursing service provided by extended-care hospitals.

In order to meet the present urgent need, and as a pilot project, four intermediate care homes have been established, two in the Lower Mainland, one in

Victoria, and one in Kamloops. The necessary staff is being recruited. While each will operate independently, administrative and some paramedical services will be shared.

The plan is ultimately for these units to be turned over for operation to a nonprofit organization.

## SPEECH AND HEARING SERVICES

During 1973 the needs of the population suffering communication disorders have been studied by a special committee appointed by the Minister of Health. The committee submitted its final report to the Health Security Programme Project in October 1973.

The structure, planning, and implementation of the services offered through the Division of Speech and Hearing have continued to be reviewed, revised, and expanded. The basic premise and contention are that development and delivery of speech and hearing services to any community in British Columbia should be on the basis of a co-ordinated developmental planned approach, to meet the needs of the whole Province according to identifiable areas of priority. Demands for service throughout the Province exceed the availability of current resources. It is essential to plan in the following fields: Space for facilities, age of population served, numbers served, personnel competency and evaluation, staffing requirements, required standards for instrumentation and environment. It is also necessary to provide for continual monitoring and modification of all programmes to ensure effectiveness. At present the Health Branch is the only Government service which has the necessary technical and administrative skills to ensure orderly development of high-standard service within the Province.

The Division was transferred from the Bureau of Special Health Services to the Bureau of Local Health Services in July 1973, and is presently located in Victoria. It is anticipated that an effective integration of local services will evolve.

Significantly, the programme grew from seven health units offering services in 1972 to 15 in 1973. Three of the health units will be staffed by a speech pathologist and an audiologist. Following the planning considerations delineated in the 1972 Annual Report, two speech, hearing, and language regional centres are functioning in the Northern Interior Health Unit and in the South Okanagan Health Unit. The facility regionally centred in Prince George is permanently housed within the Northern Interior Health Unit. A mobile unit providing the same comprehensive range of services serves the South Okanagan Health Unit.

The Speech and Hearing Programme has developed an in-service training programming and has formulated standards and accountability encompassing provision of service and the development of supportive services and methodologies.

## MOTOR-VEHICLE ACCIDENT PREVENTION

The revision of the booklet *Guide to Physicians in Determining Fitness to Drive a Motor-vehicle* was completed early in the year. After being printed by the Motor-vehicle Branch it was distributed to practising physicians by the B.C. Medical Association.

The Canadian Medical Association has signified its intention of recommending this guide to all Provinces as the basis for Canada-wide standards.

## EMPLOYEES' HEALTH SERVICE

On-the-job health services were offered by the occupational health nurses to Provincial employees in Victoria, Vancouver, Essondale, The Woodlands School, and, when the need arose, other parts of the Province.

The services rendered included a number of items which are summarized as follows:

- Pre-employment health interviews.
- Treatment of illness or injury.
- Counselling on work-related health problems.
- Medical examinations.
- Immunizations.
- Aid in rehabilitation after illness or injury.

In the Victoria area the Occupational Health Unit was visited 4,773 times by employees to receive services. In 1972 there were 4,639 visits. With the expansion of the Employee Health Unit this year, the services will be broadened. An employment counsellor is available. At Essondale and Woodlands, with 3,700 employees, the Occupational Health Unit had 3,725 employee-visits compared with 2,340 in 1972. These were mainly on a referral basis. This figure does not include other important services such as immunizations, tuberculin testing, health screening of food-handlers, environmental inspections, staff-development classes, and infection and safety committee work.

In the Vancouver area, the occupational health nurse rendered services to employees in seven Government establishments throughout the area for a total of 2,756 employee-visits, compared with 2,980 in 1972. Sickness reports from employees throughout the Province were under constant review by the occupational health physician in Vancouver and consultation with attending physicians or the employee's department was undertaken when required.

An employee health counsellor was added to the Division to implement the alcohol rehabilitation programme for employees with a drinking problem. This counsellor initiated an education programme for supervisors to make them knowledgeable on methods of handling employees with a problem and to assist them in their rehabilitation.

## VISION SERVICES

Vision screening services are being expanded, particularly for the pre-school child, and an orthoptist was added to the Local Health Services staff to assist in programme planning and to give guidance and instruction to public health nurses. Studies indicate that strabismus occurs in approximately 4.5 per cent of children and that most of these cases can be recognized before three years of age when there is still a good chance of successful treatment. One objective of the programme is to provide instruction to public health nurses in the necessary procedures so that vision screening can be made a part of the regular service to infant and pre-school children.

# COMMUNITY HEALTH SERVICES

Public health nurses play a key role in community health services in promoting and maintaining health, preventing disease and disability, and by providing comprehensive care for the sick and disabled. This is possible because of their special training in nursing and community health services, which enables them to provide health services for individuals and groups in various community settings (*see* Table VIII for selected activities).

## MATERNAL AND CHILD HEALTH

### Prenatal

The special series of classes with group discussion with prospective mothers and fathers continued to attract more participants. Pertinent health teaching by public health nurses was centred around the physical and emotional changes which occur during pregnancy, normal developmental changes, nutrition, and the changing family relationships which develop with the introduction of a new member to the family. During this receptive teaching period the sessions provided an excellent opportunity to promote positive mental health in the total family as both parents were enrolled in over 50 per cent of the classes.

- Classes were held at 74 centres where 425 series were presented to 5,298 mothers and 2,772 fathers. The over-all class attendance was 32,554, an increase of 17 per cent over the previous year.
- In addition, public health nurses made 3,802 prenatal and 21,099 postnatal visits to mothers to assess the babies' progress and discuss mother and child care, both figures representing an increase over 1972.

### Infant and Pre-school

During the infant and pre-school period, good health practices are stressed, and case finding methods used to seek out potential health problems before they have an opportunity of becoming serious through lack of care or treatment. Public health nurses are involved in a number of preventive programmes where they assess the health status of young children—in special clinics, child health conferences, kindergartens, day-care centres, and play groups, as well as in the home situation. Formal screening programmes include testing for hearing loss, vision, retardation, and deviation from the normal growth and development patterns. Use is made of the standardized Denver Developmental Screening Tests which are designed to assess motor, language, and social development for infants and pre-school children. Most formal screening clinics are set up for 3- and 4-year-old children. Follow up of deviations from the normal pattern was made by the public health nurses to assist parents. When indicated, cases were referred to specialists.

- 91 per cent of all newborn infants received at least one visit from a public health nurse during the important first six weeks of life, for a total of 21,099 visits; there were 19,796 such visits in 1972.
- Public health nurses made 16,036 additional visits to homes of infants for general health assessment, advice, and counselling on child care, with special

attention directed to children "at risk" for suspected health abnormalities, unfavourable home conditions, or suspected child abuse. The 1972 figure for these visits was 14,464.

- 17,373 infants attended child health conferences where public health nurses provided 55,152 individual counselling sessions. These were increases over 1972.
- 7,574 pre-school children attended child health conferences, for assessment, health counselling, and immunization, for a total of 95,716 individual ap-appointments. This represents a 12-per-cent increase in services over last year.
- 30,424 home visits were made by public health nurses on behalf of pre-school children for health supervision, of which 860 were primarily mental health prevention. Home visits of pre-school children totalled 29,746 in 1972.

## FAMILY, ADULT, AND GERIATRIC SERVICES

Public health nursing services are available to all age-groups:

- 204,813 visits of all types were made to homes by the public health nurses to work with families, as often the solution of an individual's health problem requires family support. Home visits totalled 184,161 in 1972.
- 167,374 visits were made on behalf of adults for health appraisal, advice, or referral and follow-up of care requested by a physician.
- 93,127 home visits were made to adults over 65 years of age, this being a substantial increase over the 1972 figure of 68,747. This 1973 figure represents 56 per cent of all home visits to adults. Services rendered included screening tests for vision, hearing, blood pressure, glaucoma, urine, mobility, and counselling on nutrition and general health.
- 230,565 professional services were given via telephone by public health nurses to families and individuals, an increase of more than 10 per cent over the 1972 figure of 207,988.
- 4,770 services were provided to individuals by nursing auxiliaries.

## PHYSIOTHERAPISTS

One full-time and four part-time physiotherapists provided consultative services to patients, public health staff, physicians, and personal care homes in eight health units. A total of 1,521 visits and 1,270 assessments were made for home care patients. In 1972 there were 1,466 visits and 1,357 assessments. Although the physiotherapists' work is related mainly to the home care programme, they also work with other health facilities and community agencies. Their involvement in the preventive and education work of the health units is of increasing importance, and the addition of time and staff would benefit prenatal, pre-school, and school programmes.

## SCHOOL HEALTH

The school setting provides a unique opportunity for health promotion as well as for the initiation of preventive health services, as large numbers of children are readily available for case-finding, individual and group health counselling, as well as for personal health service.

The public health nurse is readily accessible to the schools and has the primary responsibility for bringing to the pupils the services of health unit and other community health resources. Through her involvement in the community and with specialist consultants and her ready access to homes, she is in a key position to be responsible for the school health programme.

Also, public health nursing auxiliaries, who are lay workers, play an important role in assisting with routine procedures, allowing more time for the public health nurse to work in family health service and public health nursing.

- 40,818 visits were made by public health nurses to the homes of schoolchildren, about the same number as in 1972. Of this number in 1973, about 16 per cent were for primary and secondary preventive mental health.
- 4,762 group sessions were held with pupils concerning special problems such as family life education, venereal disease, personal relationships, etc., somewhat fewer than last year; 2,052 conferences were held on similar subjects with school staff.
- 257,644 services were given to individual pupils. This was a reduction of about 4 per cent from the 1972 figure.

Tables X and XI give further information concerning school health services, including the area covered by Greater Vancouver and Victoria.

## MENTAL HEALTH

While the Mental Health Branch has prime responsibility for mental health specialized services, mental health is recognized as an integral part of the generalized public health nursing programme as the public health nurse in her regular work is in a strategic position to provide help, particularly where there is a high-risk factor for mental health breakdown. This is particularly true because of frequent contacts with young parents and their children. The public health nurse works closely with the staff of the Mental Health Branch and relies upon them for consultation and advice and in-service education.

The public health nurses' main concern is primary prevention, which is achieved through advice and counselling on all home visits, child health conferences, expectant parent classes, and in other contacts made in the community, such as in schools and community care facilities. In summary,

- 8,804 visits were made for primary prevention, of which 50 per cent were to adults. In 1972 the figures were 7,369 and 46 per cent.
- 11,256 visits were made for secondary prevention to patients under care for emotional conditions, substantially the same as in 1972. Adult services accounted for about 65 per cent of this group.

# HOME CARE PROGRAMMES

## CO-ORDINATED PROGRAMMES

A co-ordinated home care programme is by definition "one that is centrally administered and that, through co-ordinated planning, evaluation, and follow-up procedures, provides for physician-directed medical, nursing, social, and related services to selected patients at home." This is a vital level of care—one which provides high-quality service at a level appropriate to the needs of certain patients, one which can reduce the length of patient-stay in an acute hospital and prevent unnecessary admission of certain patients to such facilities. It is important that the family unit can be maintained and the patient treated and rehabilitated within the familiar and comforting surrounding of home and family.

Home nursing care was first provided by a public health unit in British Columbia in 1921 when Saanich established its programmes. This care is now available in all Provincial health units and from most public health offices. Public health nurses provide nursing care and arrange for and co-ordinate other component services required by the patient, e.g., homemaker, meals-on-wheels, equipment and supplies.

- Home care is available from 65 Provincial public health offices to 114 communities.
- It is available to approximately 84 per cent of the population served by Provincial health units in British Columbia.
- There is no charge to the patient for nursing or social work services. Homemakers, meals-on-wheels, equipment, supplies and drugs, are paid for by the patient or, in some cases, by insurance plans, the Department of Human Resources, or other agencies.
- Health unit nursing staff made 104,422 home nursing visits during the year. This was an increase of 17 per cent over 1972.
- The cost of these visits to the B.C. Medical Plan would have been over $200,000 (at $2 per visit) in areas served by nursing agencies other than Provincial health unit staff.
- An additional 20,060 home nursing visits were made to patients under care for psychiatric or emotional conditions.

## SPECIAL HOME CARE PROJECTS

In the spring of 1971, approval was given for the first of a number of special home care projects. This was a Government-financed project to determine whether there may be, within the acute hospitals, certain types of patients who could be discharged early if all necessary home care services were available. All service components, e.g., nursing, physiotherapy, drugs, homemaker, equipment, supplies, etc., were to be supplied at no cost to the patient for a period of time approximating the number of hospital-days replaced. These special projects are now operating in Coquitlam-New Westminster, Kamloops, Victoria, Prince George, Surrey-Delta, and the Greater Vancouver Metropolitan areas of Vancouver, Richmond, North Shore, and Burnaby. In the process of organization are the Kelowna and Nanaimo home care projects.

Results of the existing projects have been encouraging. In the three projects which have operated during the full 12 months, the following results are of interest:

- In Coquitlam-New Westminster, Victoria, and Kamloops, 1,558 patients were discharged early from acute-care hospitals to home care projects.
- These patients received a total of 14,156 patient-days of care. They received 14,480 professional nursing care visits and 1,571 physiotherapy visits in the homes.
- Homemaker services to the extent of 3,607 hours were supplied to these patients.
- Drugs were provided for 1,001 patients, this representing 63 per cent of the total. All these services, plus additional equipment, supplies, meals-on-wheels, and other items necessary for care were supplied at no cost to the patient.
- The cost for total care to the home care project averaged out at slightly less than $12 per patient-day. This included administrative and service costs.
- Average length of stay on the project was 9.1 days per patient.
- Average total cost per patient was only $101.10 (the saving was equivalent to approximately $630 of acute hospital care).
- Patients, physicians, and home care staff have been impressed with the care given and the positive effects of early discharge on the patient and his family.

It is expected that the special home care projects and the traditional home care programme will be amalgamated in the future.

## PREVENTIVE DENTISTRY

For 20 years prior to 1973 the total authorized field professional staff of the Division of Preventive Dentistry was five dental officers. It was, therefore, encouraging that the 1973/74 Provincial Estimates included positions for 25 dental auxiliaries, including dental hygienists and dental assistants. Most were filled by the end of the year.

The Division, in 1964, initiated a pilot dental health programme utilizing the services of a dental hygienist. Over the years this programme was modestly expanded to include a second hygienist and two dental assistants, who were employees of the South Okanagan Union Board of Health. Their salaries were provided by this Division from funds allotted for preventive dental programmes. The Okanagan dental health team, under the leadership of the regional dental consultant, has developed many innovative programmes which have motivated children and parents to adopt better dental health practices. Evaluation of the programmes has unequivocally demonstrated their effectiveness. If the costs of dental treatment of the children of this Province are to become tax-supported at some time in the future, then the prevention of oral diseases and dento-facial deformities assumes very considerable fiscal importance.

As an indicator of the effects of the dental health programmes of this Province, each year a dental survey is carried out in one of seven regions. These surveys provide data from a statistically selected random sample of children from selected

schools in the region. Such surveys were carried out in the Greater Victoria Region in 1956, 1960, 1966, and again in 1973. In 1956, the average 15-year-old had 11.2 permanent teeth attacked by dental caries; in 1973, this was reduced to 8.5 teeth. The level of dental treatment has also greatly improved. For all school-children (aged 7–15 years) in 1956 in the Greater Victoria Region, the percentage with no untreated carious teeth at the time of the survey was 29.4 per cent. In 1973 this had increased to 48.7 per cent. Nevertheless, it must be recalled that in areas wherein it had not previously been possible to develop preventive dental services to the level of Greater Victoria, a vastly different picture is to been seen. For example, in the Fraser Valley in 1972, the percentage of school-children with no untreated carious teeth was 15.3 per cent; virtually unchanged since 1959, when the percentage was 15.5 for such children. Similarly, while the percentage of 15-year-olds in Greater Victoria with obvious periodontal disease (gingivitis or pyorrhœa) around the lower front teeth decreased from 61.9 per cent in 1966 to 18.0 per cent in 1973, the percentage was 31.7 in 1972 in the Fraser Valley. Children with severe handicapping dento-facial anomalies (severely crooked teeth) in Greater Victoria, although at a somewhat lower percentage in 1973 compared with 1966, remain a distressingly high proportion at 22.0 per cent, especially when it is noted that only one in twenty of these children is under treatment.

In Greater Victoria, dental health services have been provided since 1920 in the schools by dentists and dental assistants employed by the Board of Trustees of the Greater Victoria School District. In 1972 these services were extended to include the three adjacent school districts. Arrangements were completed in 1973 whereby the provision of these services will become the responsibility of the Capital Regional District from April 1, 1974. In Greater Vancouver, dental health programmes are provided by the City of Vancouver, School District No. 41 (Burnaby) and the North Shore Union Board of Health. Grants-in-aid are provided by the Government of British Columbia in support of the annual operating costs of these services in both metropolitan areas.

For the 17 health units providing public health services to the remainder of the Province, there are available five fully trained regional dental consultants.

Only a few of the newly appointed dental auxiliaries had previously worked with regional dental consultants as employees of local Union Boards of Health. It was therefore necessary, in 1973, to introduce an in-service training programme, and further programmes will be necessary. In-service training programmes were carried out in the Fraser Valley and Vancouver Regions and similar programmes will be developed and practised in other regions of the Province.

The areas for in-service training include

- organizing programmes in schools and health units;
- effective dental health motivational techniques in the classroom and community;
- personnel management.

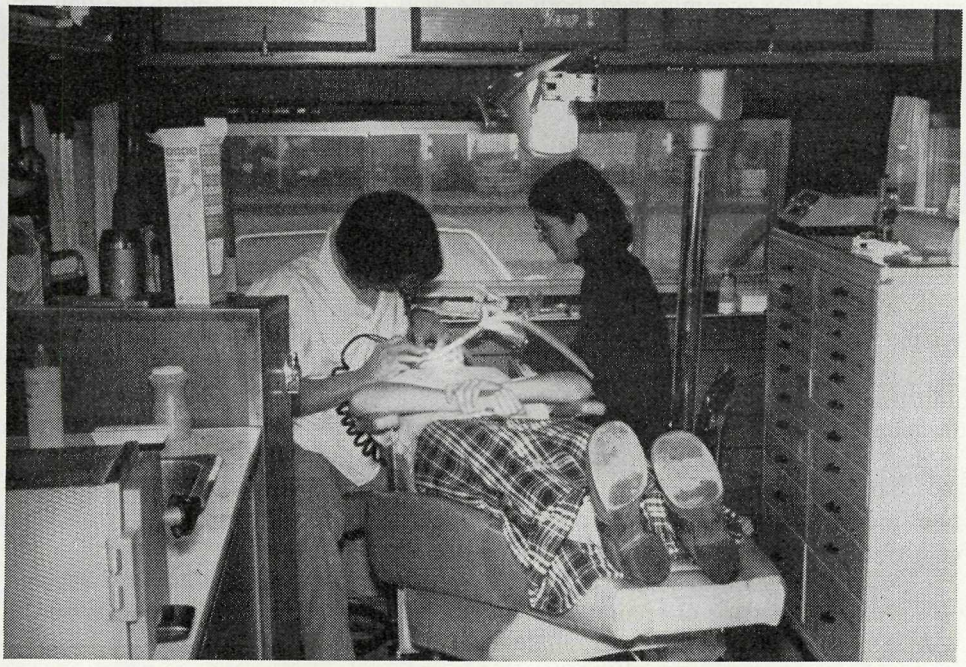
Of urgent priority is the Provincial standardization of evaluation procedures and techniques to demonstrate the effectiveness of these programmes, as they are successively introduced throughout the Province. It is likely that these services will not be available to all communities for several years.

The 3-year-old dental birthday card programme continues to exand its coverage. This service is now available in 47 school districts of the 52 rural school districts in which there are one or more resident dentists or which are regularly visited by a dentist. The service provides that as all young children known to the local health unit (and this is by far the majority) reach their third birthday, they

receive an attractive birthday card. The insert, when taken to the family dentist, entitles the child, at no direct cost to the parents, to receive a dental examination, with X-rays if necessary, dietary oral hygiene counselling, and a topical application (painting) of the teeth with fluoride solution for the partial prevention of future dental caries. Where well-trained auxiliary personnel are available for effective telephone follow-up with families who do not initially take advantage of this service, utilization rates of greater than 90 per cent of all cards delivered are now achieved. During the period August 1972 to September 1973, some 9,600 children benefited from this programme.

During the first six months of the past year, four dentists (dental public health externs) provided dental treatment on a fee-for-service basis in communities without a resident dentist. During the second six months, there were five such dentists. In total, 30 communities benefited from this service. In December 1973, four of these dentists started using transportable dental equipment issued to them on free loan by the Division. One dental extern in the Okanagan Region, with his wife working as his dental assistant, utilized a mobile trailer equipped with modern dental equipment. This facility was provided by the Government with assistance from the communities benefiting by being visited by this unit. Late in 1973, two vehicles of the large motor-home type were ordered. In 1974 these units will be equipped as two-chair dental offices. Apart from the provision of electricity and water, they will be entirely self-contained, with propane furnaces for the winter and air-conditioners for the summer months. If these prove efficient and conducive to high-quality dental services, it is planned that all dental externs will be similarly equipped during the next several years.

The Division continues to co-operate with the British Columbia Cancer Institute and the Faculty of Dentistry, University of British Columbia, toward the early



In the Okanagan Region, communities without a resident dentist are visited by a dentist with a mobile caravan equipped as a modern dental office. Two additional mobile dental units were ordered in late 1973.

detection of cancer in the oral cavity. During the past year, 86 cancer diagnostic kits were issued to dentists newly registering to practise in this Province. The booklet which is part of this kit was revised and reprinted, incorporating the latest knowledge in this field.

The ratio of population to dentists in this Province at the close of 1973 was one dentist to every 2,017 persons. There has been an improvement in this ratio each year since 1967. However, there is a great disparity between the metropolitan and rural areas. The ratio in Greater Vancouver is 1:1,428, whereas 1:3,868 pertains in the northern areas of the Province. In addition to the 1,114 dentists currently licensed, there were 215 dental hygienists and 401 certified dental assistants licensed to practise in this Province, the latter being a 25-per-cent increase over the 1972 figure.

Two clinical research trials to test the effectiveness of two different fluoride mouth rinses for the prevention of dental caries were concluded this past year. The results are currently being processed by computer. A research study to test the effectiveness of a self-applied fluoride paste followed by a fluoride rinse, twice annually, is now in its second year. Two further studies carried out in 1973 await analysis of results. One project attempted to evaluate the 3-year-old dental birthday card programme in one area of the Province and the second experimented with a methodology to estimate the dental needs of the elderly.

During the year and in consultation with the College of Dental Surgeons, the Division prepared a comprehensive report for the Health Security Programme Project.

In summary, the Division was more effective than at any other time during the past 25 years of its existence. The status of oral health of the children of British Columbia has significantly improved during this period. Nevertheless, there remains much more to be accomplished, both in the field of prevention and in the delivery of dental care.

## NUTRITION SERVICE

An unprecedented expansion of nutrition services in British Columbia characterized 1973. In August a headquarters staff member was employed to act primarily as a consultant in dietetics for community care facilities. The first health unit nutritionist in the Provincial Government began employment in September in the Boundary Health Unit, and a part-time temporary position was opened in Victoria to develop educational methodologies for the use of public health nurses.

The major focus for nutrition services was the provision of technical information, motivation, and guidance for those with first-hand opportunities to communicate such nutrition information to others. Highlights in this area included

- a two-day workshop for selected public health nurses on infant feeding;
- workshops for elementary school teachers in Prince Rupert and Nanaimo;
- participation in undergraduate education for dietetics, interns and UBC home economics students;
- development of new materials including a series of food group miniposters and a pamphlet for pregnant women;

- participation in continuing education for public health nurses at a regional conference, dietitians at a Provincial seminar series, and home economists and nutritionists at a national institute;
- twenty-six health unit visits by the central office nutrition consultants.

Evaluation of the workshops indicated the participants found the information interesting, meaningful, and applicable to their educational needs.

An extensive summer student programme was also undertaken employing 37 students working under the direction of the Provincial Nutrition Consultant and 15 under the direction of the nutritionists in the City of Vancouver. The subjects of the projects are outlined as follows:

*Provincial*

- A study of nutrition in a noninstitutional population of elderly people in Vancouver.
- Health counselling with an emphasis on nutrition for selected overweight school-children.
- Visual materials production for nutrition education.
- Development of a nutrition reference system.
- Investigation of nutrition knowledge and attitudes and of food-buying practices and education in money management of low-income families.
- Investigation of the nutritional and biological quality of hamburger.
- Investigation of effects of high doses of vitamin C on intestinal microflora.

*City of Vancouver*

- Nutrition education and snacks for day-care centres.
- Development of a survival course for young adults with minimal incomes and development of nutrition programmes for adult new Canadians.

With the release of the results of the national nutrition survey (Nutrition Canada) in November, considerable time was devoted to programme planning, including making a major contribution to Working Paper XIII on Nutrition of the Health Security Programme Project.

## PUBLIC HEALTH EDUCATION

The belief that "Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" is the basis of the Health Branch philosophy. With that view, the Division of Public Health Education provided professional consultative services throughout the Province via local health units. Fundamental to good health care delivery is the proper dissemination of information, and the consultant service is reinforced by the production of films, audio-visual services, lectures, newspaper promotions, and pamphlets.

The Division has been actively involved, with other Government departments, such as the Departments of Agriculture and Human Resources on joint film productions, and the Department of Education concerning family life education. Voluntary agencies also received consultative and technical assistance.

During 1973 the Government initiated a Summer Employment Project in which the Division of Public Health Education participated. Nine students were involved with film production, scripting, artwork, and one assisted with clerical duties.

Approximately 20 video tapes were produced, covering such topics as nursing, the handicapped, home care, completion of a birth certificate, application for a marriage licence, and filing a will notice. Six tapes dealing with food-handling were produced with both English and Chinese narrations. A considerable amount of artwork for the video tapes was also done by the students. Sanitation slides were produced for the public health inspectors to show the general public. The assistance given by the students enabled the Division to initiate and complete many projects that normal staffing and time would not permit.

As in the past, the Division allocated a portion of its budget to local health units, assisting them in the purchase of additional educational materials such as textbooks and journals. Sixteen projectors were purchased for health units to replace older models.

In 1973, attention was focused on video tapes for distribution to cablevision stations throughout the Province. Television has long been recognized as the most powerful of the information-spreading media, and with this in mind the Division produced a series of tapes covering various aspects of good health care. These were in addition to those produced with the assistance of students.

Increasingly, the Division of Public Health Education is becoming a resource centre for local health units, other Government departments, voluntary agencies, and the general public. Consultative, technical, and referral services represent the major portion of the Division's functions. Technical support is given to these services and to all sections of the Health Branch in the fields of art, photography, and audio-visual aids.

## VITAL STATISTICS

The Division of Vital Statistics continued to undertake the wide variety of duties involved in administering the *Vital Statistics Act, Marriage Act, Change of Name Act,* and part of the *Wills Act.* These duties are carried out through the main office in Victoria, a branch office in Vancouver, and 103 district offices and suboffices throughout the Province.

The Division also provides a centralized statistical service to the Health Branch and to other Government departments and certain voluntary health agencies. These services are provided through the Division's Research Section in Victoria and a Research Office in Vancouver.

Table XII, which indicated the volume of documents processed under the above-mentioned Acts in 1972 and 1973, is summarized as follows:

### REGISTRATION SERVICES

- The total volume of vital registrations accepted and certificates issued continued to increase, despite a further slight decline in the number of birth registrations.
- The number of registrations of wills notices under the *Wills Act* reflected a further substantial increase in the utilization of this service.
- Following the amendments to the *Change of Name Act* in 1972, there was a marked increase in the number of applications for changes of name, and in the number of certificates issued under this Act in the current year.

- By means of an amendment to the *Vital Statistics Act,* provision was made for recording on birth registrations a change of sex designation following trans-sexual surgery, upon production of adequate medical evidence.
- The vital statistics registration forms for births, deaths, marriages, and stillbirths were revised during the year, on the basis of model forms developed over several years by the Vital Statistics Council for Canada, and preparations were made for the introduction of the new forms in January 1974.

## BIOSTATISTICAL SERVICES

The Registry for Handicapped Children and Adults and the Cancer Registry continued a useful function, and the work is summarized as follows:

- The Registry for Handicapped Children and Adults continued to receive registrations at approximately the same level as in the past year. A special report was prepared on the programme for follow-up of children aged 7 and 14 years, covering the past five years of its operation.
- The Cancer Notification system and Register operated within the framework of the Registry for the Handicapped. An advisory panel to the Cancer Registry was appointed in 1973 and held its first meeting in May. A research officer was added to the staff of the Vancouver Research Office to assist in the expanding work of the Cancer Register and Notification system.
- The Division was represented at the Eighth Cancer Records Workshop held by the National Cancer Institute of Canada in June of this year. The records of the Registry were used to provide statistics for members of the medical profession relating to cancer mortality during the productive years of life, age-specific breast cancer rates in British Columbia, and cancer of the uterine cervix.

The Division continued to be responsible for processing data in connection with the British Columbia Cancer Institute's cytology screening programme for cervical cancer. Data on about 400,000 screening tests undertaken in 1973 were transferred to punch cards, and the recorded data on screenings undertaken in 1972 were processed and analysed.

The Research Section was heavily involved in the preparation of information prepared by the Director of Preventive Dentistry regarding the development of a dental care programme for children in the Province. This report was prepared at the request of the Director of the Health Security Programme Project.

The Division completed the processing of results of a survey of the dental health of Indian children. Assistance was given in the designing of a pre-fluoridation study of the dental health of children in the Queen Charlotte Islands. The dental health survey of school children in the City of Victoria, and dental research project in the Boundary Health Unit area, received the active attention of the Research Section.

Statistics derived from the Physicians' Notices of Births, which accompany the registrations of births in this Province, were presented in one of the Division's series of Special Reports. Births are analysed in relation to factors such as birth weight, maternal age, gestation period, legitimacy, complications of pregnancy, and infant congenital anomalies.

The Division co-operated with a physician of the British Columbia Cancer Institute in a continuing study to compare lung cancer rates among British-born immigrants, other immigrants, and natives of Canada. A paper based on the

earlier phase of this study revealed that British-born immigrants had lung cancer rates about two and a half times higher than native-born Canadians.

The Division continued to maintain a registry of congenital anomalies ascertained from multiple sources, as a part of the Registry for Handicapped Children and Adults. Listings of these cases are also submitted regularly to the Department of National Health and Welfare in connection with the continuing national surveillance study of congenital anomalies.

Patient records of the G. F. Strong Rehabilitation Centre were processed and annual tabulations prepared. Assistance was also given to a physician attached to the Centre in the analysis of data related to paraplegic and quadraplegic patients, with particular regard to their length of stay.

Information was provided for the Director of the Health Security Programme Project on costs of public health services in different parts of the Province. Assistance was also given to a physician engaged by the project to investigate ambulance services and emergency health services in the Province.

In the Boundary Health Unit, the Division co-operated in a survey undertaken to investigate the attitudes affecting utilization of the child health conference and other health services on the part of the mothers of pre-school children in the area. Mechanical tabulations derived from the 1,200 questionnaires completed were submitted to the Health Unit for reporting.

The Mechanical Tabulation Section continued to undertake editing, coding, punching, and tabulating all records submitted for processing by other divisions and agencies as well as all vital statistics documents.

Other services rendered over a wide field included

- service to the Mental Health Branch in the processing of statistics relating to patients of residential institutions and those treated at day-care centres;
- the processing of records of the operations of the Division of Venereal Disease Control and the compilation of monthly and annual statistical reports for the Division;
- the processing of statistics for the Division of Tuberculosis Control, the Director of which was supplied with extensive listings and tabulations;
- the preparation of a paper on the comparison between two commercial tuberculin antigens which had been tested in a tuberculin survey conducted on lower Central Vancouver Island in 1972.*

* This paper was accepted for publication by the *Canadian Public Health Journal.*

## IN-PATIENT CARE

The Division of In-patient Care is responsible for the care of tuberculosis patients requiring hospitalization at the Willow Chest Centre and at Pearson Hospital. In providing this service, close liaison is maintained with the Division of Tuberculosis Control to facilitate the co-ordination of the treatment of these patients, whether or not they require hospitalization. In addition, at Pearson Hospital another significant patient service is provided. This includes care for persons eligible

for the Provincial extended-care benefits and those persons who have severe respiratory disabilities from poliomyelitis or other neurological disorders.

Three wards at Pearson Hospital continue to provide facilities for care to 130 patients with tuberculosis as the renovations of the Willow Chest Centre are still under way, the latter institution having 31 beds available for this care. It is hoped that this work can be expedited so that a fourth ward can once again be available for extended-care patients. The number of admissions for tuberculosis continues to create a high level of work load for various departments of the hospital, with significant increases particularly for the X-ray, laboratory, medical records, and social service departments. The work loads on the wards for extended-care (126 beds) and poliomyelitis (40 beds) wards remain unabated, especially so because of the heavy nursing care required. This is aggravated by continuing difficulties in recruiting of staff in that department. Despite these problems, the level of care provided has not deteriorated as a result of efforts made to apply a truly multidisciplinary approach to patient care. Increased efforts are also being made to improve the level of care in dealing with the ever-present problems of alcoholism of tuberculosis patients, and the assistance of outside resources is being sought. This problem undoubtedly prolongs the hospitalization of these individuals as well as creating stress on staff. The formalizing of a hospital security service has been of some benefit, but the need for adequate security measures in another type of facility remains. Present legislation has not proven effectual.

Recruitment in the Activation Services department has been fairly successful, so that the services provided by its staff have been maintained. Reference should be made to the success of the Summer Employment Project which involved several departments of the hospital in various ways, including certain aspects of patient care. The reaction of the patients to these individuals was most favourable and was of direct and indirect benefit to them and to the staff as well.

The Social Service Department has continued with the patient's self-development and enrichment programme commenced last year, and this has been beneficial for several patients. Plans for discharge of patients to alternative and individualized accommodation were effected in several instances. It is anticipated that the majority of these discharges will be permanent or at least long term. The Social Service Department has also assisted in re-establishing a regular interdenominational church service programme particularly for the extended-care and poliomyelitis patients, although it is open to all patients. These two types of service fulfil certain needs of persons confined more or less indefinitely to a restricted life.

In-service education courses have been improved. One involving instructors from the Activation Services and Nursing Departments was started in support of the multidisciplinary approach to patient care. Other educational courses such as attendance at short-term seminars appropriate to the work of a department are being fostered. Several nurses are registered in correspondence courses provided through the Canadian Hospital Association. Assistance in the implementation of good personnel practices is being provided by means of group sessions conducted by department heads with active assistance from administration. Practical experience continues to be provided to students from various educational institutions. Requests from other sources have been received and are acted on so as to be in operation in 1974.

Construction work including replacement of roofing of several hospital areas and improved lighting in the main kitchen has been completed. Installation of a modern fire annunciator system with direct communication to the Vancouver Fire Department is nearing completion. Extension of the Pearson Hospital landscap-

ing is well under way. Various items of equipment have been purchased, including a new electrocardiograph machine and additional reserve equipment for the poliomyelitis ward.

The support of the Women's Auxiliary has been maintained at its usual high level, both in personal service to the patients and the purchase of equipment for their pleasure, such as replacement of television sets. Funds donated by the auxiliary for patient recreation services were increased and these enabled the continuation of the programmes despite increased costs and the expansion of some. Other organizations, including the B.C. Tuberculosis Society, the Tuberculosis and Chest Disabled Veterans Section of the Royal Canadian Legion, the Kinsmen Rehabilitation Foundation of British Columbia, the Multiple Sclerosis Society, the Canadian Paraplegic Association, and various church organizations have provided continued financial and personal support, all of which is much appreciated by patients and the Division.

## AID TO HANDICAPPED *

From a very modest beginning in 1954 with a staff of one and an unspecified budget, the Division for Aid to Handicapped has grown in 20 years to a staff of 26 and a budget of over $750,000. A system of delivering services which is unique in North America and which has been reported in previous Annual Reports makes it possible for 74 per cent of all of the funds allotted to be spent on direct services to the handicapped. The delivery of services is based on the proposition that the handicapped should be served whenever possible in their own community, with their own community resources and with their own community personnel. Each of seven regions established in the Province has several Aid to Handicapped Committees through which rehabilitation services are provided by an integrated community based team. There is now a total of 45 Aid to Handicapped Committees.

### UPPER VANCOUVER ISLAND REGION

In this region there are committees at Duncan, Nanaimo, Port Alberni, Parksville, Courtenay, Campbell River, and Powell River. The region covers three health unit areas.

One of the notable areas of progress in this region is the close liaison which has been developed between the rehabilitation and psychiatric wards of the Nanaimo Regional General Hospital and the various Aid to Handicapped Committees. This liaison has seen an increasing number of referrals made to the Division while the patients are still in hospital. This has been found to expedite the client's assessment and gives the Committee rapid and first-hand medical information.

Liaison has improved between a number of workshops on the Island, some newly developed, which increasingly can be used as follows:

- As a means by which future vocational potential can be assessed.
- As a resource for other patients of the various Aid to Handicapped Committees where, if regular and gainful employment cannot be predicted, a useful and satisfying activity may be found.

* *See* Table XIII.

Much progress is being made in assisting handicapped people in the Province. With help and training made possible by the Division for Aid to Handicapped, this man is successfully building a business as a piano-tuner. He also takes part in many activities in his community.

The handicapped young people in the picture below are carrying on a conversation using the hands. They received instruction and training through the efforts of the Division for Aid to Handicapped.

## GREATER VICTORIA REGION

One Aid to Handicapped Committee covers all municipalities on the southern end of Vancouver Island which make up the Greater Victoria area. In late 1972 under the auspices of the Minister of Health, the Rehabilitation Resources Committee of the Greater Victoria Community Council sponsored a seminar. The theme was "Employment of the Handicapped."

One of the products of this seminar was the identification of a need for a special resource where employable handicapped persons in the Capital Regional District could be registered so that employers wishing to hire a handicapped person could list job opportunities.

The Committee surveyed public buildings in Victoria to assemble factual information regarding the accessibility of the buildings to handicapped persons. It is planned that this information will be included in a guide book to be entitled *Victoria—A Guide for the Disabled.* It was hoped that as a result of greater awareness, modification of existing buildings and the elimination of barriers in future buildings will be encouraged.

## FRASER VALLEY REGION

Committees functioned in Coquitlam and Port Coquitlam, Surrey, Langley, Abbotsford, Chilliwack, Hope, and on the north side of the Fraser River in Mission and Haney. During 1973 the Central Fraser Valley Health Unit established an interagency team in the Mission and Haney area, and monthly meetings were held among Government, private agencies, and schools to discuss clients with especially difficult problems. The consultant in the region was continuously involved in staff education programmes for members of the local health units and student nurses of the Vancouver General Hospital, Royal Columbian Hospital, and the UBC School of Nursing.

In the Langley area a programme was planned in conjunction with the Langley School District, the Department of Human Resources, Canada Manpower, and the Public Health Service to establish an "Alternative Educational Environment" which is geared to provide educational opportunities for high school drop-outs aged 15 to 18.

## OKANAGAN REGION

The Okanagan Region includes three health units and has Aid to Handicapped Committees in Kamloops, Vernon, Penticton, Kelowna, Salmon Arm, Revelstoke, and one in Oliver. A partial result of this progress was an increase in the case load of nearly 30 per cent during the year. Also during the year a concerted attempt was made to make clients and their families completely aware of the services available to them, what rehabilitation is about, and what part they may play in the overall planning and implementation of a programme of rehabilitation for each individual. Clients are thus being encouraged to participate in planning their own rehabilitation.

## KOOTENAY REGION

There are Aid to Handicapped Committees in Trail, Nelson, Creston, Grand Forks, Castlegar, and Cranbrook, with the regional consultant's office in the Selkirk Health Unit in Nelson. The Grand Forks Aid to Handicapped Committee was newly established during the year and coincided with the efforts of the Health Branch in the area to establish a Community Services Centre as a pilot project.

## NEW STAFF

In 1973, three candidates were recruited and at a time of the preparation of this report were undergoing a period of training in the head office of the Division in Vancouver.

## ACTIVITIES IN GREATER VANCOUVER

Other activities of the Division which have been reported in some detail in previous Annual Reports have been continued and, in most instances, have increased. In the Greater Vancouver Region there are seven committees, two of which are associated with hospitals. A steady case load of about 500 active cases at all times is being maintained. During 1973 there was an increase in the amount of grants to vocational rehabilitation agencies and in the money available for vocational training of the handicapped. Cost of living increases in maintenance allowance were made during the year.

The Vocational Orientation Programme for the Deaf was put into effect with the valued assistance of personnel of Vancouver City College, the Department of Manpower, and the Provincial Department of Education. As a further means by which services to the deaf in particular can be improved, the same group put into effect a programme through which interpreters for the deaf can be trained.

# LABORATORY SERVICES

For the Division of Laboratories it was "business as usual" during the nine months of renovations to the laboratories. The work load increased by 10 per cent from 504,491 tests performed in 1972 to 556,930 tests in 1973. The number of tests performed in 1973 in the Main Laboratory and the Branch Laboratories at Nelson and Victoria are compared with the corresponding figures for 1972 in Table XIV. Major increases were recorded in smears and cultures for miscellaneous bacteria (52 per cent), smears and cultures for *Neisseria gonorrhœæ* (21 per cent) examination for intestinal parasites (15 per cent), water microbiology (13 per cent), syphilis serology (8 per cent), and smears and cultures for mycobacteria (7 per cent). Decreases were recorded in virus isolation (53 per cent) and viral serology (4 per cent).

## PROJECTS CONDUCTED BY SUMMER STUDENTS

From May to August 1973, 23 university students were employed under the Summer Employment Project made possible by the Provincial Government. Thirteen worked on scientific, clerical, or administrative projects, two worked at the Water Resources Laboratory, and eight were employed in duties ancillary to the projects, the object of which was to perform tasks that regular staff had no time to do. Much was accomplished.

## BACTERIOLOGY

### DIPHTHERIA

In 1973, *Corynebacterium diphtheriæ* was isolated from 130 patients, compared with 70 in 1972. Two major outbreaks of faucial diphtheria accounted for

most of the isolates in 1973; one, caused by *C. diphtheriæ gravis,* involved 30 cases; the other, caused by *C. diphtheriæ intermedius,* involved 55 cases. Cutaneous diphtheria was diagnosed in 16 other patients.

### Gonorrhœa

The number of smears examined for *Neisseria gonorrhœæ* increased by 21 per cent from 83,800 in 1972 to 100,700 in 1973; 7 per cent were positive. The number of swabs cultured for *N. gonorrhœæ* increased by 4 per cent from 17,500 in 1972 to 21,500 in 1973; 20 per cent were positive. A further 9,200 vaginal, cervical, and urethral specimens submitted for bacteriological examination were also cultured for the gonococcus; 6 per cent were positve.

### Water Microbiology

The number of water samples examined increased 13 per cent from 41,200 in 1972 to 46,700 in 1973. The increase was due mostly to additional beach-sampling programmes carried out by students and by trainees in public health inspection. At the Main Laboratory, the number of beach samples increased by 85 per cent from 2,000 in 1972 to 3,700 in 1973.

## VIROLOGY

### Electron Microscope

The establishment of electron microscopy services at the Provincial Laboratories during 1973 provided rapid diagnostic facilities for certain viral diseases. Weighing almost 3 tons, the electron microscope with supporting equipment cost more than $100,000, and magnifies up to 500,000 times. It is therefore possible to visualize and photograph viral particles. The value of electron microscopy is illustrated by the following incident:

At 1.30 on Sunday morning, July 8, a rural doctor phoned the Laboratory Director about a 2-year-old boy who had a rash. He has just returned by air from a vacation in Indian with his parents. As the doctor felt that the child's rash might be smallpox, the virologist drove 40 miles to examine the patient and collect specimens. By noon the specimens were being processed and examined. As no smallpox virus particles were seen by electron microscope, it was reasonably certain that the child was not suffering from smallpox and it was therefore possible to cancel surveillance of those people who had been in contact with this 2-year-old boy.

### Poliomyelitis

Six cases of paralytic poliomyelitis were diagnosed clinically. The one patient who died became ill after a trip to Mexico.

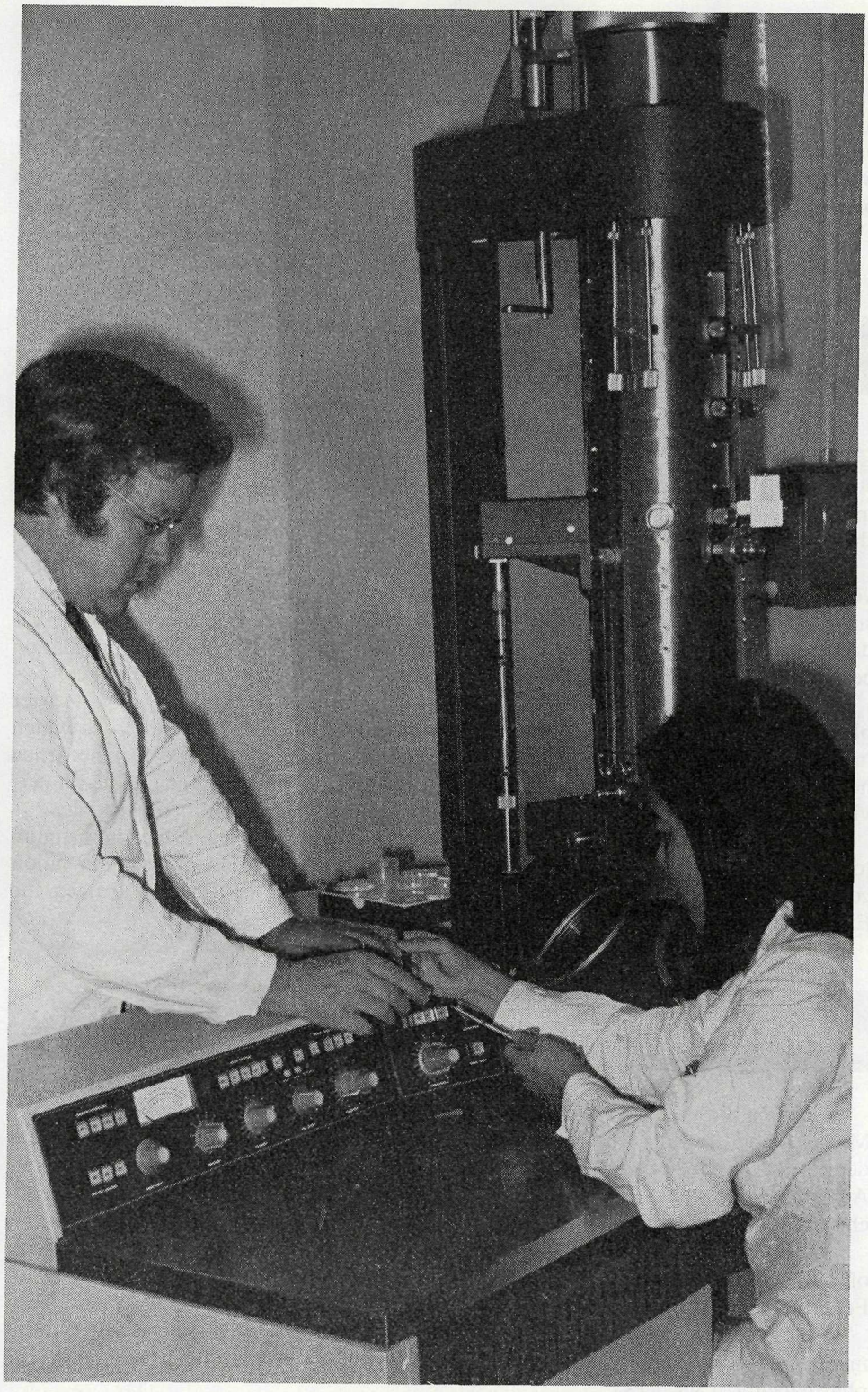
### Virus Isolation

The decrease in tests for virus isolation resulted from termination of the 1972 rubella study.

## REFERENCE SERVICES

### Tropical and Parasitic Diseases Reference Service

The number of specimens examined for parasites increased 15 per cent from 15,200 in 1972 to 17,500 in 1973. This increase was largely due to routine examination of immigrants from tropical and subtropical areas. This Reference Service provided advice on preparation for travel to the tropics and on the diagnosis and treatment of tropical and parasitic diseases. Special drugs, not available commercially in Canada, were supplied to 40 patients in 1973, compared with 15 in 1972.



Completed during 1973 was the installation of an electron microscope. In the hands of a trained operator it has already demonstrated its ability to assist in the rapid diagnosis of viral disease. The microscope and supporting equipment weighs 3 tons and cost approximately $100,000.

### Botulism Reference Service for Canada

Established in 1971 jointly by the Provincial and Federal Health Departments at the British Columbia Provincial Laboratories, the Botulism Reference Service for Canada investigated 12 incidents of suspected botulism in 1973. Nine of these occurred in British Columbia and three in other parts of Canada. The five incidents which proved to be botulism affected 13 persons and caused two deaths. The Service participated in the investigation of 15 other food-poisoning incidents in British Columbia.

## EMERGENCY HEALTH SERVICE

The Pharmaceutical Consultant continued to act as co-ordinator of the British Columbia Emergency Health Service. The prime purpose of this Service is to strengthen the capacity of communities to develop their capability to provide for mass casualty care and to indoctrinate health personnel in the effects of disaster on their community organizations and facilities.

An important activity of the Emergency Health Service is the continued surveillance and maintenance of $2½ million worth of pre-positioned emergency health supplies (*see* Table XV). While the rate of issuing pre-positioned supplies has decreased, planning continues so as to provide for new and expanding population centres which result from the development of industry throughout the Province.

The increased interest which is evident in hospitals and community disaster planning goes together with an increase in the community disaster exercises which have been carried out. During 1973, a two-and-a-half day course in emergency health planning was conducted. Also, a two-hour in-service emergency health services orientation course was presented at 13 hospitals and four nursing schools.

Provincial Emergency Health Services were gratified to have the opportunity to present a literature display at the Annual British Columbia Hospitals' Association convention. Continued support was given to the course "Primary Care for the Emergency Patient."

## PHARMACEUTICAL CONSULTANT SERVICE

During the year the Consultant in Pharmacy continued to provide advice to the Minister and Deputy Minister and dealt with requests from other Government departments. He served as the Departmental representative on the Minister's Drug Advisory Committee. The problems of drug-quality assurance and bulk-drug purchasing were two subjects of discussion by the committee and its subcommittees.

Meetings were attended and discussions held with pharmacists of the Division of Tuberculosis Control, Department of Human Resources, Mental Health Branch, Federal Penitentiary Service, and a representative of the Purchasing Commission.

Inquiries on behalf of the Mental Health Branch were made at community mental health centres and a mental health boarding-home regarding the delivery of pharmaceutical services.

# COUNCIL OF PRACTICAL NURSES

By the end of 1973 the British Columbia Council of Practical Nurses* had completed nine years of the programme which it conducts under the authority of the *Practical Nurses Act*. The Act says that "the Council shall, subject to this Act and the regulations, administer the affairs of licensed practical nurses. . . ." The Council's principal function, however, is the assessment of applications for licences as practical nurses and the issuance of licences to suitable persons who are properly qualified. The Council as a whole meets about once every two months and, during the nine years, has held 61 meetings and has received and considered over 9,000 applications. The disposition of these applications is shown in Table XVI at the end of this volume. During 1973 the Council held seven meetings, and there were also numerous meetings of committees of the Council.

Early in 1973 the Council completed a revision of the booklet entitled *Outline of Duties to Be Used as a Guide in the Employment of a Licensed Practical Nurse in British Columbia.* As in the case of the first edition which was published in 1966, the 1973 edition was distributed to acute general hospitals, extended-care facilities, community care facilities, and public health units (local health departments) throughout British Columbia. In addition, a copy was sent to each licensed practical nurse when she was granted her licence.

The Council continued to serve the Department of Education as an advisory body in matters relating to the training of practical nurses. (The training is the responsibility of the Department of Education under the *Public Schools Act.*)

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* The 10 members of the Council are appointed by Order of the Lieutenant-Governor in Council on the basis of nominations by

(*a*) the Minister of Health (two members);
(*b*) the College of Physicians and Surgeons of British Columbia (one member);
(*c*) the Registered Nurses' Association of British Columbia (two members);
(*d*) the Minister of Education (one member);
(*e*) the British Columbia Hospitals' Association (one member);
(*f*) the Licensed Practical Nurses Association of British Columbia (three members).

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*Chap. 19, Diseases of the gastrointestinal tract caused by protozoan parasites. In* Gastroenterology, pp. 1029–1050, ed. A. Bogoch, McGraw-Hill, New York, 1973, by E. J. Bowmer.

*Chap. 21, Food Poisoning. In* Gastroenterology, pp. 1087–1112, ed. A. Bogoch, McGraw-Hill, New York, 1973, by E. J. Bowmer.

*Listeria monocytogenes Infections in Canada 1951–January 1972 with reports on 15 cases in British Columbia,* Canadian Medical Association Journal, *109:* 125–135, July 21, 1973, by E. J. Bowmer, J. A. McKiel, W. H. Cockcroft, N. Schmitt, and D. E. Rappay.

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*Rehabilitative and Educational Audiology Planning,* Language Speech and Hearing Services in Schools, Vol. IV, No. 1, 1973, by D. Zink.

*The Senior Chef,* Journal of Nutrition Education, 5(2):142, 1973, by P. Wolczuk.

# TABLES

*Table I—Approximate Numbers of Health Branch Employees by Major Categories at the End of 1973*

| | |
|---|---|
| Physicians in local health services | 18 |
| Physicians in institutional and other employment | 19 |
| Nurses in local health services | 348 |
| Nurses in institutions | 72 |
| Public health inspectors | 78 |
| Dentists in local health services | 5 |
| Laboratory scientists | 23 |
| Laboratory technicians | 29 |
| Public health engineers | 9 |
| Statisticians | 7 |
| Others | 866 |
| Total | 1,474 |

*Table II—Organization and Staff of Health Branch (Location and Approximate Numbers of Persons Employed at End of 1973)*

| | | |
|---|---|---|
| Health Branch headquarters, Legislative Buildings, Victoria | 62 | |
| Health Branch office, 828 West 10th Avenue, Vancouver | 39 | |
| | | 101 |
| Division of Vital Statistics— | | |
| Headquarters and Victoria office, Legislative Buildings, Victoria | 71 | |
| Vancouver office, 828 West 10th Avenue, Vancouver | 20 | |
| | | 91 |
| Division of Tuberculosis Control— | | |
| Headquarters, 2647 Willow Street, Vancouver | 10 | |
| Willow Chest Centre, 2647 Willow Street, Vancouver | 130 | |
| Pearson Hospital, 700 West 57th Avenue, Vancouver | 329 | |
| Victoria and Island Chest Clinic, 1902 Fort Street, Victoria | 11 | |
| New Westminster Chest Clinic, Sixth and Carnarvon, New Westminster | 9 | |
| Travelling clinics, 2647 Willow Street, Vancouver | 18 | |
| | | 507 |
| Division of Laboratories— | | |
| Headquarters and Vancouver Laboratory, 828 West 10th Avenue, Vancouver | 87 | |
| Nelson Branch Laboratory, Kootenay Lake General Hospital | 1 | |
| Victoria Branch Laboratory, Royal Jubilee Hospital[1] | ----- | |
| | | 88 |

[1] Services are purchased from the Royal Jubilee Hospital, which uses its own staff to perform the tests.

*Table II—Organization and Staff of Health Branch (Location and Approximate Numbers of Persons Employed at End of 1973)*—Continued

| | | |
|---|---|---|
| Division of Venereal Disease Control—Headquarters and Vancouver Clinic, 828 West 10th Avenue, Vancouver | | 21 |
| Division for Aid to Handicapped— | | |
| Headquarters, 828 West 10th Avenue, Vancouver | 15 | |
| Nanaimo | 1 | |
| Vernon | 1 | |
| Prince George | 2 | |
| Surrey | 1 | |
| Nelson | 1 | |
| | | 21 |
| Local Public Health Services (Health Units)— | | |
| East Kootenay, Cranbrook | 29 | |
| Selkirk, Nelson | 16 | |
| West Kootenay, Trail | 29 | |
| North Okanagan, Vernon | 32 | |
| South Okanagan, Kelowna | 48 | |
| South Central, Kamloops | 41 | |
| Upper Fraser Valley, Chilliwack | 31 | |
| Central Fraser Valley, Mission | 33 | |
| Boundary, Cloverdale | 68 | |
| Simon Fraser, Coquitlam | 43 | |
| Coast-Garibaldi, Powell River | 19 | |
| Saanich and South Vancouver Island, 780 Vernon Avenue, Victoria | 48 | |
| Central Vancouver Island, Nanaimo | 62 | |
| Upper Island, Courtenay | 27 | |
| Cariboo, Williams Lake | 22 | |
| Skeena, Prince Rupert | 32 | |
| Peace River, Dawson Creek | 19 | |
| Northern Interior, Prince George | 46 | |
| | | 645 |
| Total | | 1,474 |

There were also part-time employees in many of the places listed. The part-time employees serving on a continuous basis totalled the equivalent of approximately 80 full-time employees.

*Table III—Comparison of Public Health Services Gross Expenditure for the Fiscal Years 1970/71 to 1972/73*

| | Gross Expenditure | | | Percentage of Gross Expenditure | | | Percentage Increase or Decrease (—) Over Previous Year |
|---|---|---|---|---|---|---|---|
| | 1970/71 | 1971/72 | 1972/73 | 1970/71 | 1971/72 | 1972/73 | |
| | $ | $ | $ | | | | |
| Local health services | 6,235,726 | 6,689,345 | 7,531,472 | 40.9 | 40.5 | 39.6 | 12.6 |
| Patient care | 4,335,945 | 4,711,304 | 4,902,690 | 28.4 | 28.5 | 25.8 | 4.1 |
| Cancer, arthritis, rehabilitation, and research | 1,774,510 | 1,973,397 | 2,080,058 | 11.6 | 12.0 | 10.9 | 5.4 |
| General administration and consultative services | 1,205,622 | 1,460,097 | 1,918,868 | 7.9 | 8.8 | 10.1 | 31.4 |
| Division of Laboratories | 923,546 | 832,178 | 996,926 | 6.1 | 5.0 | 5.2 | 19.8 |
| Division of Vital Statistics | 599,684 | 647,938 | 686,712 | 3.9 | 3.9 | 3.6 | 6.0 |
| Division of Venereal Disease Control | 189,188 | 209,138 | 241,508 | 1.2 | 1.3 | 1.3 | 15.5 |
| Prescription Drug Subsidy Plan | (1) | (1) | 544,444 | (1) | (1) | 2.9 | (1) |
| Health Care Survey | (1) | (1) | 119,666 | (1) | (1) | .6 | (1) |
| Totals | 15,264,221 | 16,523,397 | 19,022,344 | 100.0 | 100.0 | 100.0 | 15.1 |

1 New programme in 1972/73.

*Table IV—Training of Health Branch Staff Proceedings Toward a Diploma or Degree in a Public Health Specialty*

(Types of training, universities or other training centres attended, and numbers trained)

Completed training during 1973—

| | |
|---|---|
| Master of Science in Speech Pathology and Audiology (University of Washington) | 1 |
| Master of Science in Human Communication (London University/Guy's Hospital Medical School) | 1 |
| Master's Degree in Public Health (John Hopkins University) | 1 |
| Master's Degree in Public Health (University of Michigan) | 1 |
| Diploma in Public Health Nursing (University of British Columbia) | 2 |
| Bachelor's Degree in Public Health Nursing (Dalhousie University) | 1 |
| Total | 7 |

Commenced training during 1973—

| | |
|---|---|
| Diploma in Public Health (University of Toronto) | 1 |
| Master's Degree in Speech Therapy (Washington State University) | 1 |
| Total | 2 |

*Table V—Training of Health Branch Staff by Means of Short Courses*

(Types of training, universities or other training centres, and numbers trained)

| | |
|---|---|
| Visit to various facilities pertaining to health care delivery in San Francisco Bay area | 1 |
| Course on Preventive Dentistry (Vancouver and District Dental Society) | 1 |
| Continuing Education Course for Health Officers (University of British Columbia) | 40 |
| Seventeenth Annual Conference on Research and Teaching of Infant Development, Merril-Palmer Institute, Detroit) | 1 |
| IRMA Conference (Industrial Relations Management Association of B.C., Harrison Hot Springs) | 1 |
| Course on Groundwater Technology (Environmental Protection Agency, Cincinnati, Ohio) | 1 |
| Public Health Nurses' Workshop on Infant Nutrition (Health Branch, Provincial Health Building, Vancouver) | 21 |
| Periodontics Today—Problems and Solutions (University of British Columbia) | 1 |
| Fraser Valley Public Health Nurses Regional Institute (Vancouver) | 98 |
| Community Mental Health Courses (the Maples, Vancouver) | 30 |
| Workshop for Public Health Nurses (Woodlands School for the Retarded, Vancouver) | 10 |
| Evaluation of Public Water Supplies (Environmental Protection Agency, Murfreesboro, Tenn.) | 1 |
| Planning Services for Exceptional Children (B.C. Teachers' Federation, Prince George) | 1 |
| Maternal and Child Health Nursing (University of British Columbia) | 3 |
| Behaviour Modification (Continuing Education Department, University of British Columbia) | 2 |
| Rehabilitation Methods for Activation and Extended Care (Department of Continuing Education, University of British Columbia) | 2 |
| American Industrial Health Conference (Industrial Medical Association, Denver, Col.) | 1 |
| National Conference (American Waterworks Association, Las Vegas) | 1 |
| Continuity of Health Care in British Columbia (School of Nursing, University of British Columbia) | 1 |
| Training Seminar in Theory and Survey Instrumentation of Microwave Detection (Radiation Protection Bureau, Ottawa) | 1 |
| Understanding Group Dynamics in Nursing Practice (Continuing Education in Health Sciences, University of British Columbia) | 1 |
| Business and Technical Report Writing (B.C. Institute of Technology) | 1 |
| Course in Electron Microscopy (School of Hygiene, University of Toronto) | 1 |
| Senior Health Branch Staff Training (University of British Columbia) | 140 |
| National Conference on Deafness and Hard of Hearing (Canadian Rehabilitation Council for the Disabled, Ottawa) | 1 |
| Second Annual Rehabilitation Seminar (Glenrose Hospital, Edmonton, Alta.) | 1 |
| Fifteenth Annual Health Physics Course (Radiation Protection Bureau, Department of National Health and Welfare) | 1 |

*Table V—Training of Health Branch Staff by Means of Short Courses*—Continued

| | |
|---|---|
| Instructional visit to California State Laboratories (Berkeley, Calif.) | 1 |
| Course on Atherosclerosis (Division of Continuing Education, University of British Columbia | 1 |
| Orientation Programme in Industrial Health (School of Hygiene and Tropical Medicine, London, U.K.) | 1 |
| Clinical Application of Sexuality in Nursing (University of Victoria) | 1 |
| Refresher Course for Supervisory Public Health Nursing Personnel (Provincial Health Department, Vancouver) | 40 |
| Preventive Dentistry Conference (American Society of Preventive Dentistry) | 1 |
| Acupuncture for Dentists (University of Oregon, Portland, Oreg.) | 1 |
| International Conference on Gonorrhœa (Health Protection Branch, Ottawa) | 2 |
| Mental Health Course for Public Health Nurses (Riverview Hospital, Vancouver) | 20 |
| International Radiation Protection Meeting and Refresher Courses (Health Education and Welfare, Washington, D.C.) | 1 |
| Visit to Speech Pathology and Audiology Division (University of Oregon Medical School, Portland, Oreg.) | 1 |
| Seminar on Current Topics in Nutrition (University of British Columbia) | 1 |
| Fourth Joint Chemical Engineering Conference (Environmental Protection Service, Vancouver) | 1 |
| Western Canada Water and Sewage Conference (Federation of Associations of the Canadian Environment, Winnipeg, Man.) | 1 |
| Symposium on Management of Municipal Watersheds (Pennsylvania State University, State College, Pennsylvania) | 1 |
| Special Community Nursing Service Course (Ignace Family Health Centre, Ignace, Ont.) | 1 |
| Rural Environmental Engineering Conference (University of Maine and University of Vermont) | 1 |
| Education Media (Faculty of Education, Simon Fraser University) | 1 |
| Visit to Centre for Disease Control (U.S. Public Health Service, Atlanta) | 1 |
| Conference on Health and Physical Activity (Minister of Health, Vancouver) | 2 |
| Northwest On-site Management Seminar (Washington Land Use Association, Seattle) | 2 |
| 1973 Convention (American Speech and Hearing Association, Detroit) | 2 |
| Joint National Convention (Canadian Speech and Hearing Association and Speech and Hearing Association of Alberta, Calgary) | 1 |
| Minimal Cerebral Dysfunction (University of Washington, School of Public Health, Seattle) | 1 |
| Visit to Radiation Protection Bureau (Ottawa) | 1 |
| Transactional Analysis and Nursing (P.A. Woodward Instructional Resources Centre, University of British Columbia) | 2 |

*Table VI—Reported Communicable Diseases in British Columbia, 1969–73 (Including Indians)*

| | 1969 | | 1970 | | 1971 | | 1972 | | 1973 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number of Cases | Rate | Number of Cases | Rate | Number of Cases | Rate | Number of Cases | Rate | Number of Cases | Rate |
| Amœbiasis | 12 | 0.6 | 5 | 0.2 | 1 | 0.1 | 1 | 0.1 | ------ | ------ |
| Brucellosis | 1 | 0.1 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ |
| Diarrhœa of the newborn (*E. coli*) | 23 | 1.1 | 54 | 2.5 | 64 | 2.9 | 60 | 2.7 | 29 | 1.3 |
| Diphtheria | 14 | 0.7 | 9 | 0.4 | 11 | 0.5 | 11 | 0.5 | 51 | 2.2 |
| Dysentery, type unspecified | 209 | 10.1 | 143 | 6.7 | 126 | 5.7 | 72 | 3.2 | 34 | 1.5 |
| Food infection— | | | | | | | | | | |
| Salmonellosis | 400 | 19.3 | 532 | 24.9 | 548 | 24.9 | 415 | 18.5 | 320 | 13.9 |
| Unspecified | 19 | 0.9 | 6 | 0.3 | 8 | 0.4 | 73 | 3.2 | 36 | 1.6 |
| Food intoxication— | | | | | | | | | | |
| Staphylococcal | 29 | 1.4 | 8 | 0.4 | 6 | 0.3 | 16 | 0.7 | 25 | 1.1 |
| Botulism | 8 | 0.4 | 2 | 0.1 | ------ | ------ | 5 | 0.2 | ------ | ------ |
| Hepatitis— | | | | | | | | | | |
| Infectious | 2,139 | 103.3 | 1,910 | 89.4 | 1,954 | 89.0 | 1,894 | 84.3 | 1,755 | 75.8 |
| Serum | (*) | (*) | (*) | (*) | (*) | (*) | 26 | 1.2 | 25 | 1.1 |
| Leprosy | ------ | ------ | ------ | ------ | 1 | 0.1 | ------ | ------ | 1 | 0.1 |
| Meningitis— | | | | | | | | | | |
| Bacterial | 13 | 0.6 | 14 | 0.6 | 17 | 0.8 | 34 | 1.5 | 47 | 2.0 |
| Viral | 22 | 1.1 | 32 | 1.5 | 45 | 2.0 | 22 | 1.0 | 20 | 0.9 |
| Pertussis | 59 | 2.9 | 155 | 7.2 | 91 | 4.1 | 102 | 4.5 | 102 | 4.4 |
| Trichinosis | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 1 | 0.1 |
| Tularæmia | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 1 | 0.1 |
| Q. fever | ------ | ------ | ------ | ------ | ------ | ------ | 1 | 0.1 | ------ | ------ |
| Rubella | (†) | (†) | (†) | (†) | 1,168 | 53.2 | 84 | 3.7 | 77 | 3.3 |
| Rubeola | (†) | (†) | (†) | (†) | 200 | 9.1 | 97 | 4.3 | 158 | 6.8 |
| Shigellosis | 64 | 3.1 | 166 | 7.8 | 241 | 11.0 | 202 | 9.0 | 212 | 9.2 |
| Streptococcal throat infection and scarlet fever | 1,236 | 59.7 | 644 | 30.1 | 306 | 13.9 | 454 | 20.2 | 836 | 36.1 |
| Tetanus | 2 | 0.1 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ |
| Poliomyelitis | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 1 | 0.1 |
| Typhoid and paratyphoid fever | 5 | 0.2 | 5 | 0.3 | 5 | 0.2 | 13 | 0.6 | 3 | 0.1 |
| Totals | 4,255 | 205.6 | 3,685 | 172.4 | 4,792 | 218.2 | 3,582 | 159.4 | 3,734 | 161.3 |

*Table VII—Reported Infectious Syphilis and Gonorrhœa, British Columbia, 1946, 1951, 1956, 1961, and 1966–73*

| Year | Infectious Syphilis | | Gonorrhœa | |
|---|---|---|---|---|
| | Number | Rate[1] | Number | Rate[1] |
| 1946 | 834 | 83.0 | 4,618 | 460.4 |
| 1951 | 36 | 3.1 | 3,336 | 286.4 |
| 1956 | 11 | 0.8 | 3,425 | 244.9 |
| 1961 | 64 | 3.9 | 3,670 | 225.3 |
| 1966 | 71 | 3.8 | 5,415 | 290.8 |
| 1967 | 72 | 3.7 | 4,706 | 242.0 |
| 1968 | 68 | 3.3 | 4,179 | 208.2 |
| 1969 | 45 | 2.2 | 4,780 | 232.0 |
| 1970 | 76 | 3.6 | 6,070 | 285.2 |
| 1971 | 73 | 3.4 | 7,116 | 325.7 |
| 1972 | 99 | 4.4 | 7,921 | 352.5 |
| 1973[2] | 100 | 4.3 | 8,970 | 386.6 |

[1] Rate per 100,000 population. [2] Preliminary.

*Table VIII—Statistical Summary of Selected Activities of Public Health Nurses, September 1971 to August 1973, Inclusive*[1]

| | 1972/3 | 1971/2 |
|---|---|---|
| School service— | | |
| Directly by nurse | 257,664 | 268,049 |
| Directly by auxiliaries | 82,524 | 53,657 |
| Teacher/Nurse conferences | 4,296 | 5,466 |
| Home visits | 40,818 | 40,978 |
| Group sessions with pupils | 4,762 | 5,096 |
| Meetings with staff | 2,052 | 1,910 |
| Conferences with staff | 67,438 | 64,203 |
| Expectant parents— | | |
| Class attendance by mothers | 20,516 | 20,992 |
| Class attendance by fathers | 12,038 | 7,187 |
| Prenatal home visits | 3,802 | 3,672 |
| Postnatal visits | 21,099 | 19,796 |
| Child health— | | |
| Infants— | | |
| Conferences attendance | 55,152 | 52,657 |
| Home visits | 37,135 | 34,260 |
| Service by auxiliaries | 377 | 257 |
| Pre-school— | | |
| Conferences attendance | 95,716 | 85,411 |
| Home visits | 30,424 | 29,746 |
| Services by auxiliaries | 22,707 | 10,857 |
| Home care programme— | | |
| Nursing care visits | 104,422 | 88,921 |
| Physiotherapist assessments | 1,270 | 1,357 |
| Physiotherapist home visits | 1,521 | 1,466 |
| Adult health supervision visits | 51,217 | 47,543 |
| Mental health visits | 20,060 | 18,547 |
| Disease control— | | |
| Tuberculosis visits | 9,863 | 8,905 |
| Venereal disease visits | 3,643 | 4,840 |
| Communicable disease visits | 7,860 | 6,516 |
| Immunizations— | | |
| Smallpox | 92,379 | 89,883 |
| Poliomyelitis | 150,451 | 144,205 |
| Basic series of diphtheria, pertussis, and tetanus | 21,061 | 20,446 |
| Rubella | 27,842 | 31,304 |
| Measles (rubeola) | 21,370 | 24,269 |
| Other | 171,362 | 155,927 |
| Total doses | 484,465 | 466,034 |

*Table VIII—Statistical Summary of Selected Activities of Public Health Nurses, September 1971 to August 1973, Inclusive*[1]—Continued

| | 1972/3 | 1971/2 |
|---|---|---|
| Tests— | | |
| Tuberculin | 16,444 | 16,101 |
| Other | 5,445 | 12,964 |
| Family Service— | | |
| Total visits to homes | 204,813 | 184,161 |
| Professional services by telephone | 230,565 | 207,988 |
| Direct services by auxiliaries | 4,770 | 459 |

[1] Services provided by public health nurses under the jurisdiction of the Health Branch, but does not include service provided by Greater Vancouver, Victoria, Esquimalt, Oak Bay, and New Westminster.

*Table IX—Statistical Summary of Public Health Inspectors' Activities, 1970–73, for 17 Provincial Health Units*

| | 1970 | 1971 | 1972 | 1973 (Estimate) |
|---|---|---|---|---|
| Food premises— | | | | |
| Eating and drinking places | 4,718 | 3,952 | 5,022 | 10,781 |
| Food processing | 751 | 698 | 1 | 1 |
| Food stores | 1,516 | 1,505 | 1,622 | 1,842 |
| Other | 408 | 448 | 775 | 1,052 |
| Factories | 714 | 561 | 337 | 327 |
| Industrial camps | 416 | 260 | 260 | 310 |
| Hospitals | 88 | 86 | 2 | 2 |
| Community care[3] | 397 | 690 | 1,703 | 1,849 |
| Schools | 723 | 753 | 498 | 544 |
| Summer camps | 179 | 186 | 212 | 280 |
| Other institutions | 251 | 336 | 2 | 2 |
| Housing | 1,856 | 1,437 | 1,741 | 1,670 |
| Mobile-home parks | 1,550 | 1,296 | 1,566 | 1,980 |
| Camp-sites | 837 | 745 | 1,718 | 1,608 |
| Other housing | 262 | 291 | 454 | 409 |
| Hairdressing places | 501 | 487 | 384 | 341 |
| Farms | 440 | 369 | 345 | 416 |
| Parks and beaches | 915 | 797 | 366 | 424 |
| Swimming-pools— | | | | |
| Inspection | 1,232 | 1,115 | 1,298 | 1,379 |
| Samples | 1,207 | 907 | 1,343 | 1,339 |
| Surveys (sanitary and other) | 768 | 767 | 449 | 864 |
| Waste disposal | 1,270 | 861 | 797 | 920 |
| Public water supplies— | | | | |
| Inspection | 1,150 | 1,110 | 1,305 | 1,488 |
| Sample | 5,302 | 4,637 | 4,975 | 5,518 |
| Private water supplies— | | | | |
| Inspection | 2,068 | 1,968 | 2,042 | 2,436 |
| Sample | 3,422 | 2,914 | 2,551 | 2,728 |
| Pollution samples— | | | | |
| Bacteriological | 1,685 | 1,603 | | |
| Chemical | 864 | 303 | 1,003 | 1,279 |
| Field tests | 406 | 520 | | |
| Private sewage disposal | 11,808 | 13,614 | 17,554 | 22,072 |
| Municipal outfalls and plants | 836 | 552 | 438 | 579 |
| Plumbing | 211 | 214 | 399 | 564 |
| Subdivisions | 4,305 | 4,881 | 6,307 | 5,466 |
| Site inspections | 8,833 | 9,976 | 10,685 | 11,896 |
| Nuisances— | | | | |
| Sewage | 3,707 | 3,927 | 3,376 | 3,217 |
| Garbage and refuse | 2,364 | 2,138 | 1,963 | 1,851 |
| Other (pests, etc.) | 2,338 | 2,299 | 2,524 | 2,903 |
| Disease investigation | 308 | 310 | 338 | 303 |
| Meetings | 3,502 | 3,849 | 3,109 | 3,137 |
| Educational activities | 1,139 | 1,139 | 1,234 | 1,446 |

[1] Included in "other food premises".
[2] Included in "community care".
[3] Includes boarding-homes, youth hostels, day-care centres, hospitals, and other institutions.

The estimates for 1973 do not include the services provided by 17 student Public Health Inspectors and a considerable number of students employed under the Summer Employment Project.

*Table X—Number of Pupils Receiving Basic Immunization Prior to Entering Grade I, September 1972*

| Type of Immunization | Greater Vancouver | Greater Victoria | Remainder of Province | Total |
|---|---|---|---|---|
| Total pupils newly enrolled | 9,858 | 2,883 | 24,074 | 36,815 |
| Smallpox | 6,452 (65.4%) | 2,122 (73.6%) | 16,190 (67.3%) | 24,764 (67.3%) |
| Diphtheria, pertussis, and tetanus | 7,843 (79.6%) | 2,282 (79.2%) | 18,278 (75.9%) | 28,403 (77.1%) |
| Poliomyelitis | 6,503 (66.0%) | 1,977 (68.6%) | 15,729 (65.3%) | 24,209 (65.8%) |
| Rubeola (measles) | 5,506 (55.9%) | 1,799 (62.4%) | 13,985 (58.1%) | 21,290 (57.8%) |

*Table XI—Pupils Referred for Health Services*[1]

| Reason for Referral | Greater Victoria | | Area Served by Health Branch | |
|---|---|---|---|---|
| | Referred to Public Health Nurse | Referred by Public Health Nurse for Further Care | Referred to Public Health Nurse | Referred by Public Health Nurse for Further Care |
| Vision | 1,884 | 1,534 | 21,045 | 13,075 |
| Hearing | 1,151 | 773 | 8,827 | 2,659 |
| Speech | 153 | 103 | 1,670 | 907 |
| Emotional | 721 | 355 | 5,837 | 2,609 |
| Skin conditions | 1,258 | 629 | 5,582 | 2,141 |
| Other | 3,162 | 1,252 | 17,329 | 5,246 |
| Totals | 8,329 | 4,646 | 60,290 | 26,637 |
| Per cent of enrolment | 17.6 | 9.8 | 16.8 | 7.4 |

[1] Figures for Greater Vancouver not available.

Of the total enrolment of 405,379 for the two areas shown in the table, 16.9 per cent were referred to the public health nurse and 7.7 per cent were referred by her for further care.

*Table XII—Registrations Accepted Under Various Acts*

| | 1972 | 1973 (Preliminary) |
|---|---|---|
| Registrations accepted under *Vital Statistics Act*— | | |
| Birth registrations | 34,600 | 34,080 |
| Death registrations | 17,968 | 18,110 |
| Marriage registrations | 20,619 | 21,600 |
| Stillbirth registrations | 356 | 360 |
| Adoption orders | 1,863 | 2,000 |
| Divorce orders | 5,187 | 5,440 |
| Delayed registrations of birth | 324 | 400 |
| Registrations of wills notices accepted under *Wills Act* | 23,525 | 27,230 |
| Total registrations accepted | 104,442 | 109,220 |
| Legitimations of birth effected under *Vital Statistics Act* | 198 | 230 |
| Alterations of given name effected under *Vital Statistics Act* | 193 | 250 |
| Changes of name under *Change of Name Act* | 1,052 | 1,570 |
| Materials issued— | | |
| Birth certificates | 65,658 | 76,690 |
| Death certificates | 8,818 | 8,630 |
| Marriage certificates | 7,798 | 8,770 |
| Baptismal certificates | 26 | 20 |
| Change of name certificates | 1,220 | 1,750 |
| Divorce certificates | 248 | 310 |
| Photographic copies | 8,131 | 9,210 |
| Wills notice certification | 11,148 | 11,880 |
| Total certificates issued | 103,047 | 117,260 |
| Nonrevenue searches for Government departments | 12,500 | 12,730 |
| Total revenue | $385,282 | $463,560 |

*Table XIII—Case Load of the Division for Aid to Handicapped, January 1 to December 31, 1973*

| | | | |
|---|---|---|---|
| Cases currently under assessment or receiving services, January 1, 1973 | | | 1,495 |
| New cases referred to Aid to Handicapped Committees outside Vancouver Metropolitan Region | | 914 | |
| New cases referred to Aid to Handicapped Committees in Vancouver Metropolitan Region— | | | |
| Vancouver | 385 | | |
| Vancouver General Hospital | 24 | | |
| Richmond | 17 | | |
| Pearson Hospital | 2 | | |
| Total | | 428 | |
| New cases referred from other sources | | 74 | |
| Cases reopened (all regions) | | 265 | |
| Total new referrals considered for services, January 1, 1973, to December 31, 1973 | | | 1,681 |
| Total cases provided with service in 1973 | | | 3,176 |

*Analysis of Closed Cases*

| | | | |
|---|---|---|---|
| Rehabilitated— | | | |
| Employment placement made— | | | |
| Canada Manpower | 34 | | |
| Division for Aid to Handicapped | 22 | | |
| Other | 304 | | |
| Total | | 360 | |
| Job placements not feasible—restorative services completed | | 35 | |
| Not rehabilitated— | | | |
| Severity of disability | 112 | | |
| No disability | 1 | | |
| Unable to locate clients | 55 | | |
| No vocational handicap | 8 | | |
| Other | 124 | | |
| Total | | 300 | |
| Other— | | | |
| Transferred | | 133 | |
| Deceased | | 13 | |
| Total | | | 841 |
| Cases assessed and found not capable of benefiting from services | | | 1,029 |
| Total cases closed in 1973 | | | 1,870 |
| Cases remaining in assessment or receiving services | | | 1,306 |
| Grand total | | | 3,176 |

*Table XIV—Statistical Report of Tests Performed in 1972 and 1973, Main Laboratory, Nelson Branch Laboratory, and Victoria Branch Laboratory*

| Item | 1972 | | | 1973 | | |
|---|---|---|---|---|---|---|
| | Main | Nelson | Victoria | Main | Nelson | Victoria |
| *Bacteriology Service* | | | | | | |
| Enteric Section— | | | | | | |
| Cultures— | | | | | | |
| Salmonella/Shigella | 15,591 | 262 | 4,441 | 14,331 | 272 | 5,108 |
| Enteropathogenic *E. coli* | 3,576 | ..... | 1,580 | 3,855 | ..... | 1,538 |
| Food poisoning | 145 | ..... | 34 | 194 | ..... | 22 |
| Miscellaneous Section— | | | | | | |
| Cultures— | | | | | | |
| *C. diphtheriæ* | 6,281 | 48 | 1,503 | 6,283 | 74 | 5,085 |
| Hæmolytic Staph./Strep. | ..... | 500 | 100 | ..... | 617 | 8 |
| Miscellaneous | 6,916 | 327 | 21 | 11,514 | 305 | 30 |
| Fungus | 3,120 | ..... | ..... | 3,125 | ..... | ..... |
| *N. gonorrhœæ* | 14,061 | ..... | 3,438 | 14,755 | ..... | 6,763 |
| Smears—*N. gonorrhœæ* | 81,395 | 1,444 | 937 | 97,347 | 1,956 | 1,392 |
| Animal virulence | 119 | ..... | 7 | 194 | ..... | 17 |
| Tuberculosis Section— | | | | | | |
| Cultures—*M. tuberculosis* | 30,107 | ..... | 1,953 | 31,691 | ..... | 2,209 |
| Smears—*M. tuberculosis* | 20,337 | 10 | 1,635 | 21,812 | 6 | 1,803 |
| Sensitivity tests | 1,063 | ..... | ..... | 1,167 | ..... | ..... |
| Atypical mycobacteria | 251 | ..... | ..... | 374 | ..... | ..... |
| Animal inoculation | 554 | ..... | 5 | 532 | ..... | 3 |
| Parasites— | | | | | | |
| Fæces | 11,535 | ..... | 2,288 | 13,692 | ..... | 2,414 |
| Pinworm swabs | 1,364 | 49 | ..... | 1,326 | 51 | ..... |
| Water Microbiology Section— | | | | | | |
| Presumptive/Confirmed coliform test | 23,406 | 2,417 | 4,600 | 28,947 | 3,392 | 4,192 |
| Completed coliform test | 2,281 | 262 | 717 | 2,863 | 370 | 168 |
| Fæcal coliform test | 4,779 | ..... | 1,377 | 6,893 | ..... | 471 |
| Fæcal streptococcal test | 22 | ..... | ..... | 40 | ..... | ..... |
| Standard plate count | 2,229 | ..... | 149 | 2,668 | ..... | 46 |
| Other tests (algæ, shellfish) | ..... | ..... | ..... | 12 | ..... | ..... |
| Serology Section— | | | | | | |
| VDRL— | | | | | | |
| Blood (qualitative) | 159,283 | 5,191 | 11,523 | 169,572 | 5,487 | 14,945 |
| Blood (quantitative) | 1,865 | 8 | 100 | 2,129 | 11 | 74 |
| CSF | 2,739 | ..... | 775 | 2,470 | ..... | 865 |
| FTA-ABS | 6,749 | ..... | ..... | 7,532 | ..... | ..... |
| Darkfield (includes DFATP) | 368 | ..... | 11 | 121 | ..... | 6 |
| Agglutinations—Widal, Brucella, Paul-Bunnell, other | 5,666 | 341 | 356 | 5,223 | 335 | 707 |
| ASTO | 8,932 | ..... | 775 | 8,389 | ..... | 824 |
| *Virology Service* | | | | | | |
| Virus isolation— | | | | | | |
| Tissue culture | 3,384 | ..... | ..... | 1,930 | ..... | ..... |
| Rubella | 1,904 | ..... | ..... | 208 | ..... | ..... |
| Embryonated egg | 345 | ..... | ..... | 287 | ..... | ..... |
| Hæmadsorption | 192 | ..... | ..... | 341 | ..... | ..... |
| Serological identification— | | | | | | |
| Hæmagglutination inhibition— | | | | | | |
| Rubella | 27,604 | ..... | ..... | 24,660 | ..... | ..... |
| Other viruses | 1,077 | ..... | ..... | 1,498 | ..... | ..... |
| Complement fixation | 2,126 | ..... | ..... | 2,623 | ..... | ..... |
| Neutralization | 3,946 | ..... | ..... | 4,475 | ..... | ..... |
| Totals | 455,312 | 10,859 | 38,320 | 495,364 | 12,876 | 48,690 |
| Combined totals | | 504,491 | | | 556,930 | |

*Table XV—Emergency Health Service Medical Units Pre-positioned Throughout British Columbia*

| | |
|---|---|
| Emergency hospitals | 16 |
| Advanced treatment centres | 43 |
| Casualty collecting units | 69 |
| Hospital disaster supplies kit | 242 |
| Blood donor pack | 21 |
| Number of municipalities | 79 |
| Number of storage locations | 112 |
| Number of Emergency Health Service units | 187 |

*Table XVI—Licensing of Practical Nurses*

(Disposition of applications received since inception of programme in 1965 to December 31,1973)

| | | | | |
|---|---|---|---|---|
| Received | | | | 9,542 |
| Approved— | | | | |
| On the basis of formal training | | 5,727 | | |
| On the basis of experience only— | | | | |
| Full licence | 396 | | | |
| Partial licence | 875 | | | |
| | | 1,271 | | |
| | | | 6,998 | |
| Rejected | | | 1,357 | |
| Deferred pending further training, etc. | | | 868 | |
| Deferred pending receipt of further information from applicants | | | 166 | |
| Awaiting assessment at December 31, 1973 | | | 153 | |
| | | | | 9,542 |
| Number of licences issued to December 31, 1973 | | | | 6,219[1] |
| Number of practical nurses holding currently valid licences at December 31, 1973 | | | | 4,932[2] |

[1] The number of licences issued (6,219) is less than the number of applications approved (6,998) because some persons whose applications were approved did not take the final action to complete licensing.

[2] The number of currently valid licences (4,932) is less than the number of licences issued (6,219) because some persons who have received licences at some time had not requested the annual renewal.

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