

PROVINCE OF BRITISH COLUMBIA

Seventy-sixth Annual Report of the
**Public Health Services
of British Columbia**

HEALTH BRANCH
DEPARTMENT OF HEALTH SERVICES AND HOSPITAL INSURANCE

YEAR ENDED DECEMBER 31

1972



Printed by K. M. MACDONALD, Printer to the Queen's Most Excellent Majesty
in right of the Province of British Columbia.

1973

DEPARTMENT OF HEALTH SERVICES AND HOSPITAL INSURANCE
(HEALTH BRANCH)

THE HONOURABLE DENNIS COCKE
Minister of Health Services and Hospital Insurance

SENIOR PUBLIC HEALTH ADMINISTRATIVE STAFF

G. R. F. ELLIOT
*Deputy Minister of Health and Provincial Health Officer
and
Director, Bureau of Special Health Services*

A. H. CAMERON
Director, Bureau of Administration

K. I. G. BENSON
Director, Bureau of Local Health Services

W. BAILEY
Director, Division of Environmental Engineering

E. J. BOWMER
Director, Division of Laboratories

C. E. BRADBURY
Director, Division for Aid to Handicapped

E. M. DERBYSHIRE
Pharmaceutical Consultant

J. H. DOUGHTY
Director, Division of Vital Statistics

MRS. M. GREEN
Director, Division of Public Health Nursing

H. K. KENNEDY
Director, Division of Venereal Disease Control

M. A. KIRK
Senior Consultant, Division of Public Health Education

A. A. LARSEN
Director, Division of Epidemiology

F. McCOMBIE
Director, Division of Preventive Dentistry

D. MOWAT
Director, Division of Tuberculosis Control

H. J. PRICE
Departmental Comptroller

R. G. SCOTT
Director, Division of Public Health Inspection

J. H. SMITH
Director, Division of Occupational Health

G. WAKEFIELD
Director, Division of In-patient Care

MISS P. WOLCZUK
Consultant, Public Health Nutrition

G. D. ZINK
Director, Speech and Hearing Services

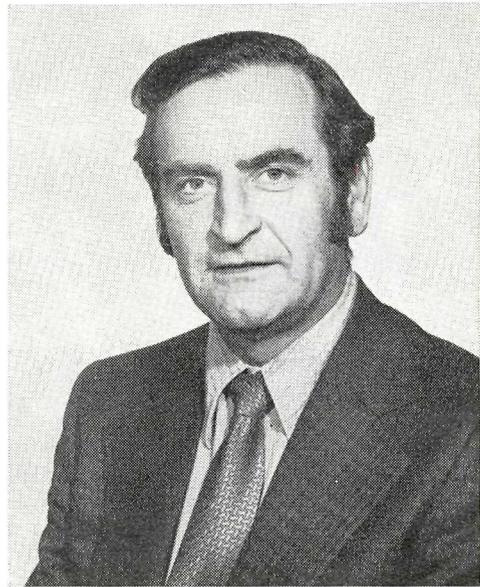
OFFICE OF THE MINISTER OF HEALTH SERVICES
AND HOSPITAL INSURANCE,
VICTORIA, B.C., January 15, 1973.

*To Colonel the Honourable JOHN R. NICHOLSON, P.C., O.B.E., Q.C., LL.D.,
Lieutenant-Governor of the Province of British Columbia.*

MAY IT PLEASE YOUR HONOUR:

The undersigned respectfully submits the Seventy-sixth Annual Report of the Public Health Services of British Columbia for the year ended December 31, 1972.

DENNIS COCKE
Minister of Health Services and Hospital Insurance



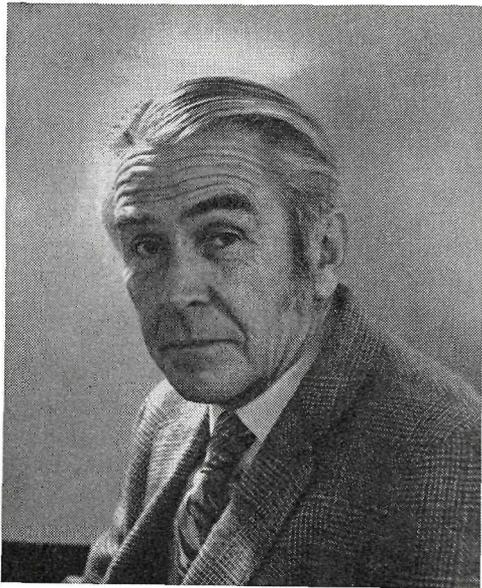
HON. DENNIS COCKE
*Minister of Health Services and
Hospital Insurance*

DEPARTMENT OF HEALTH SERVICES AND HOSPITAL
INSURANCE (HEALTH BRANCH),
VICTORIA, B.C., January 8, 1973.

*The Honourable Dennis Cocke,
Minister of Health Services and Hospital Insurance,
Victoria, B.C.*

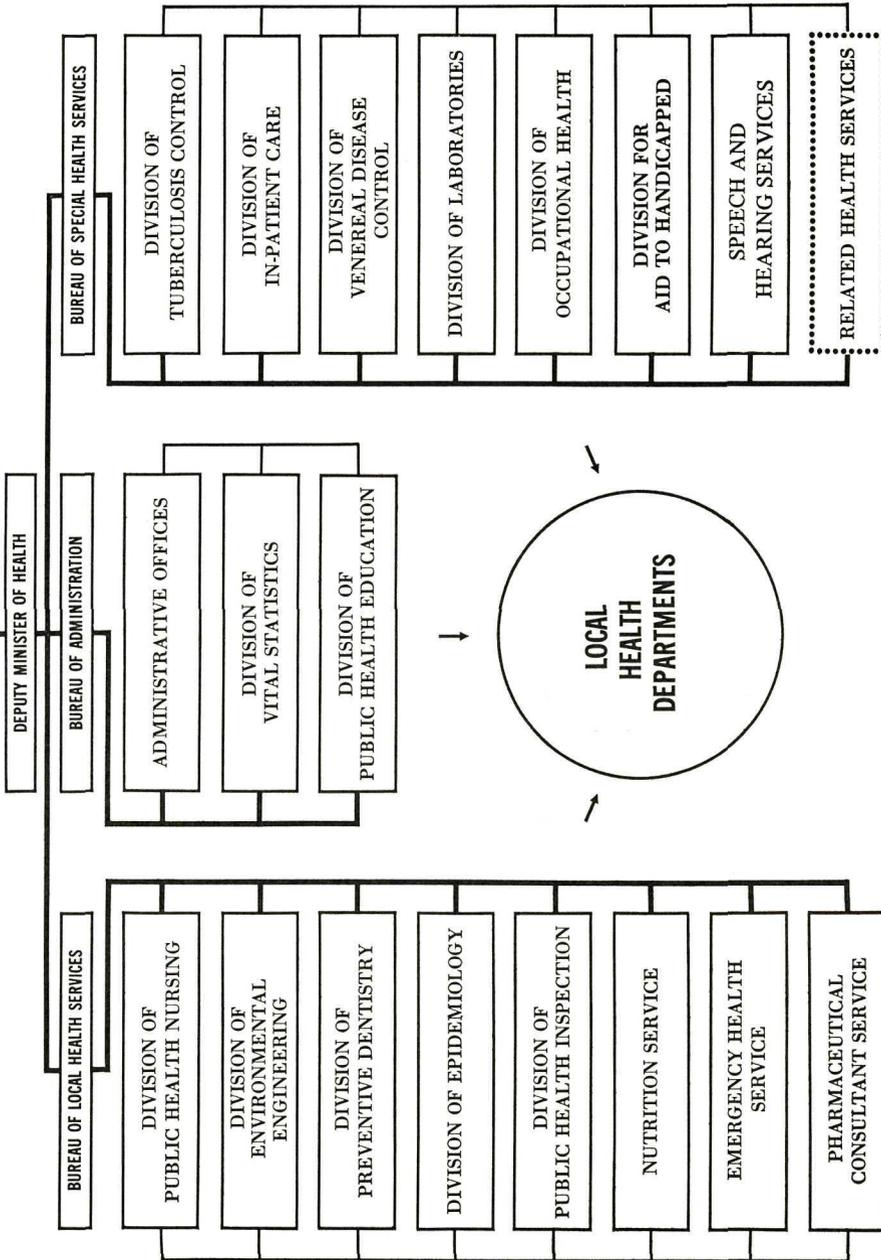
SIR: I have the honour to submit the Seventy-sixth Annual Report of the Public Health Services of British Columbia for the year ended December 31, 1972.

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
MINISTER OF HEALTH SERVICES AND HOSPITAL INSURANCE



The Health Branch is one of the four branches of the Department of Health Services and Hospital Insurance, together with the branches of 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 organization 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.

TABLE OF CONTENTS

	PAGE
Introduction.....	9
Communicable and Reportable Disease.....	13
Health and Our Environment.....	18
Specialized Community Health Programmes.....	22
Community Health Nursing.....	27
Home Care.....	28
Maternal and Child Health.....	32
School Health.....	33
Preventive Dentistry.....	35
Nutrition Service.....	39
Public Health Education.....	42
Vital Statistics.....	44
In-patient Care.....	46
Aid to Handicapped.....	48
Laboratory Services.....	50
Emergency Health Service.....	52
Pharmaceutical Consultant Service.....	53
Council of Practical Nurses.....	54
Publications, 1972.....	55
 Tables—	
I—Approximate Numbers of Health Branch Employees by Major Categories at the End of 1972.....	56
II—Organization and Staff of Health Branch (Location and Approximate Numbers of Persons Employed at End of 1972).....	56
III—Comparison of Public Health Services Gross Expenditures for the Fiscal Years 1969/70 to 1971/72.....	58
IV—Training of Health Branch Staff Proceeding Toward a Diploma or Degree in a Public Health Specialty.....	58
V—Training of Health Branch Staff by Means of Short Courses.....	59
VI—Reported Communicable Diseases in British Columbia, 1968–72 (Including Indians).....	60
VII—Reported Infectious Syphilis and Gonorrhœa, British Columbia, 1946, 1951, 1956, 1961, 1965–72.....	61
VIII—Statistical Summary of Selected Activities of Public Health Nurses, September 1971 to August 1972, Inclusive.....	61
IX—Statistical Summary of Public Health Inspectors' Activities, 1969–72, for 17 Provincial Health Units.....	63
X—Summary of Services Provided by Speech and Hearing Services, 1972.....	63
XI—Report of Direct Service by Auxiliary Workers to Public Health Nursing Programme, September 1971 to August 1972.....	64
XII—Number of Pupils Receiving Basic Immunization Prior to Entering Grade I, September 1971.....	64
XIII—Number of Pupils With Immunization Up to Date at End of Grade I, June 1972.....	64
XIV—Rubella Immunization Status of Grade V Girls, June 1972.....	64

Tables—*Continued*

	PAGE
XV—Enrolment in Public and Private Schools in British Columbia, June 1972.....	65
XVI—Pupils Referred for Health Services.....	65
XVII—Registrations Accepted Under Various Acts.....	65
XVIII—Case Load of the Division of Rehabilitation, January 1 to December 31, 1972.....	66
XIX—Statistical Report of Tests Performed in 1971 and 1972, Main Laboratory, Nelson Branch Laboratory, and Victoria Branch Laboratory	67
XX—Emergency Health Service Medical Units Pre-positioned Throughout British Columbia.....	68
XXI—Licensing of Practical Nurses.....	68

Seventy-sixth Annual Report of the Public Health Services of British Columbia

HEALTH BRANCH

DEPARTMENT OF HEALTH SERVICES AND HOSPITAL INSURANCE

YEAR ENDED DECEMBER 31, 1972

Public health services throughout the world have almost invariably had their origins in the need to control communicable diseases. The official bodies providing these services have carried names such as "Health Departments" and "Boards of Health," depending upon the wishes of the legislators of the day.

In British Columbia, the first legislation to authorize a Provincial Board of Health was passed in the late 1860's, but such a Board did not actually function until almost 30 years later! Beginning in the 1890's, however, the Board exercised its authority in administering the Province's public health services and continued to do so for some 50 years. Then, in 1946, the services were given full departmental rank when the Department of Health and Welfare was created. In 1959 this was changed to the Department of Health Services and Hospital Insurance, comprised of three parts, each with its own Deputy Minister—the Public Health Branch, the Mental Health Branch, and the Hospital Insurance Service. Late in 1972 the Medical Services Commission was included (on transfer from the Department of the Provincial Secretary) to make a "four-branch" department.

Over the years, most public health services throughout the world have extended their programmes and activities well beyond communicable disease control. British Columbia has been no exception. Since World War II the public health services provided by the Health Branch have expanded to include formal programmes in nutrition, public health education, and aid to handicapped persons. At the time of the poliomyelitis epidemic in 1953 the Government established, under the jurisdiction of the Health Branch, a facility for the continuing care of post-poliomyelitis cases. Parts of the Health Branch's Pearson Hospital in Vancouver, built in 1951 for the care and treatment of tuberculosis patients, have been gradually converted for the long-term care of other types of patients who do not have communicable diseases. In 1957 the first "home care" programme was established in a health unit (local health department). By the end of 1972, 114 centres throughout the Province had home care programmes. (As the name implies, they are intended to provide health services in the patients' own homes and so reduce the need for high-cost hospital care.) In 1971 the responsibility for administering the *Community Care Facilities Licensing Act* was transferred to the Health Branch. (Under this Act the main objective is to ensure that proper supervision is given to boarding-homes, kindergartens, and other facilities giving care to persons who, although not ill, are not able to care for themselves.) More recently still, the Health Branch was given the major responsibility in designing, constructing, and probably operating several "personal care" homes. (According to present planning, these will provide beds for ambulatory persons who do not require services in an extended-care hospital but who need more care than can be provided in a rest home.)

With these changes in the role and the responsibilities of the Health Branch, the time has come to re-examine the objectives and to include in the re-examination the relationships among the services offered by the Health Branch and those offered by the other branches of the Department. With this end in view, the Provincial

Government commissioned Dr. R. Foulkes, late in 1972, to undertake a study entitled the "Health Security Research Project." It is anticipated that Dr. Foulkes will submit a report to the Minister of Health Services and Hospital Insurance in approximately one year's time.

This Seventy-sixth Annual Report describes the events and trends in the public health services during 1972 and the state of affairs at the end of the year. Details of the various programmes are set forth in the narrative which follows this introduction and the tables which appear at the end of the Report.

THE PROVINCE AND ITS PEOPLE

There was a population of 2,247,000 in the Province in 1972, which is 62,000 more than in 1971. In the Province's area of 366,000 square miles, this is about 6.1 persons per square mile compared with 4.5 of 10 years ago. While the central area of the Province has shown notable growth during this period, the heaviest concentrations of population continue to be in the southwestern corner of the Province.

Some of the more significant developments recorded among the population during the year are revealed by the following preliminary statistics:

- The birthrate per 1,000 population declined in 1972 to 15.5. The final figure was 16.0 in 1971.
- For the second year, a drop of some magnitude occurred in the proportion of births which are illegitimate. A high of 13.8 per cent was reached in 1969. The following year the percentage dropped very slightly to 13.7. However, in 1971 there was a more pronounced decline to 12.2 and in 1972 this reversal was continued, the proportion declining to 11.2 per cent. This is the same as the percentage seven years ago.
- Again, in 1972, there was little change in the marriage rate, there having been 9.2 marriages per 1,000 population. The 1971 rate was 9.3.
- Likewise, the deathrate showed little change in 1972, being 8.0 per 1,000 population, the same as the record low rate first recorded in 1970.
- Heart disease took a somewhat greater number of lives in 1972 than in the previous year. The rate of deaths was 270 per 100,000 population, compared with the 1971 rate of 266. In view of the almost continuous, and considerable, decline in heart-disease deaths since 1965, this year's slightly higher figure is not surprising.
- Cancer showed no change in the rate of deaths this year, the rate recorded being 154 per 100,000 population. This was lower than the rates for 1969 and 1970, however.
- The rate of deaths for cerebrovascular lesions in 1972 was 89 per 100,000, somewhat higher than the rate of 85 for 1971.
- Accidents resulted in 74 deaths per 100,000 population, a slight reduction from the last year's high figure of 75. The proportion of accidental deaths resulting from motor-vehicle accidents was 41, slightly above the level in 1971. The proportion of accidental deaths which resulted from falls increased again this year, being over 16 per cent.
- The suicide rate for 1972 was at about the same high level recorded in 1971, 17 per 100,000 population. This is considerably above the rate of about 10, registered 10 years ago.
- An encouraging improvement was noted this year in the infant mortality rate, one of the important indices of the level of community health services. The rate recorded in 1972 was at a record low of 16.0 per 1,000 live births.

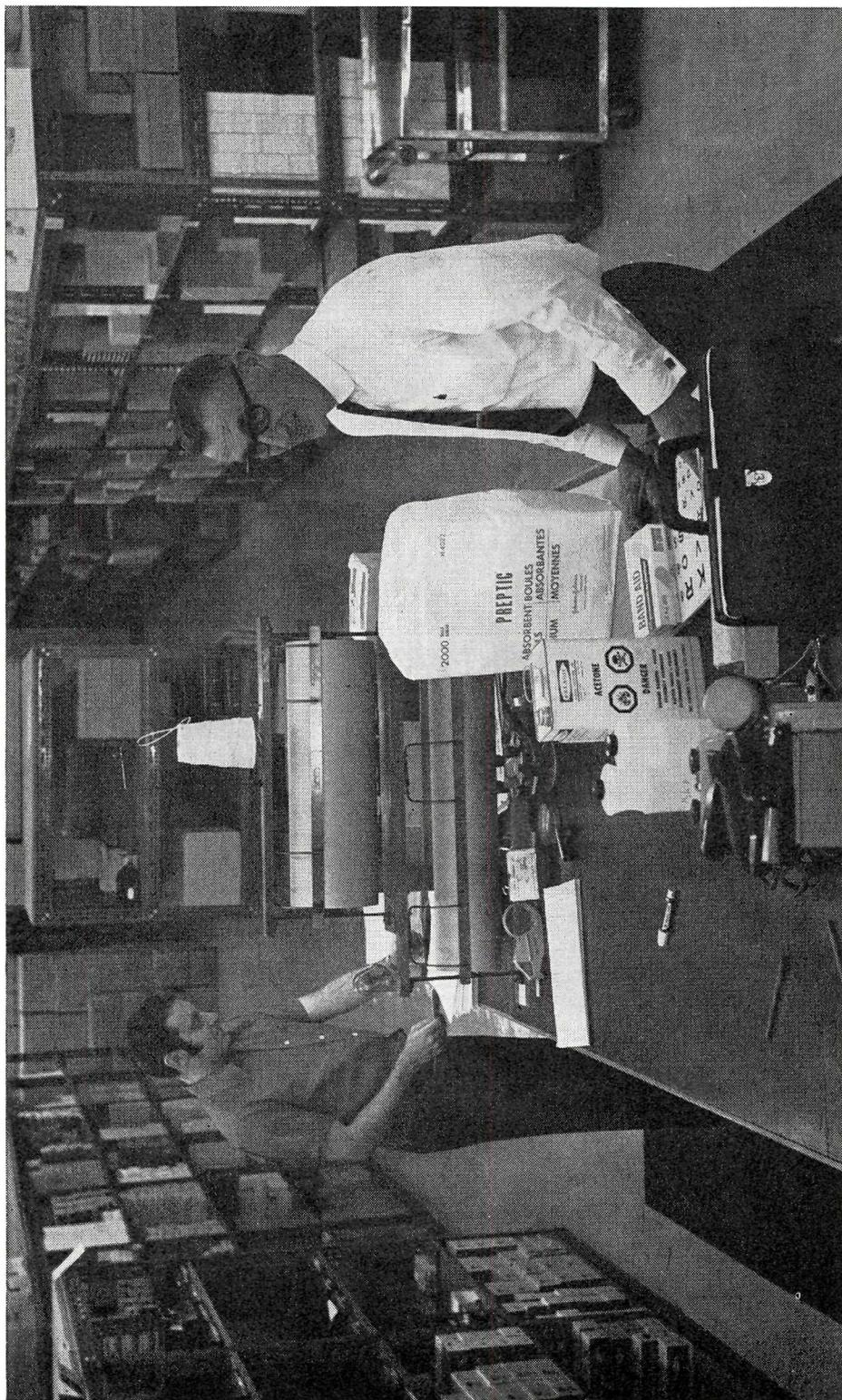
- Again this year, as in 1971, there were no serious outbreaks of communicable disease in British Columbia.
- For the second time in the history of the Province, reports were received of Western equine encephalomyelitis among humans. As yet there is no commercially available vaccine for prevention of this disease and control measures are expensive and not very effective.
- Trichinosis from infected bear meat was also reported a number of times. The amount of trichinosis infection in game animals is not known and studies are under way to determine the extent of the problem.
- The epidemic of gonorrhœa, which started in 1969, continued through 1972. However, as a result of the decline in the number of transient youths and the increase in the numbers of unemployed youths living independently and no longer under parental control, there has been a change in the epidemic pattern. The disease now continues at a high rate throughout the year, whereas formerly it was a summer epidemic.
- A further increase this year in reported active tuberculosis cases seems to confirm that the decline which occurred in the number of reports for 1970 was an unusual fluctuation. It appears that the large number of immigrants into the Province is contributing to the maintenance of the number of active cases.



In this, my first report as Deputy Minister of Health and Provincial Health Officer, I wish to note another significant event which occurred in 1972. This was the retirement, early in the year, of Dr. James A. Taylor, my predecessor in office. Dr. Taylor began his career in the public health services in 1938 when he became a Medical Health Officer in the Abbotsford area. He became second-in-command of the Provincial service in 1949 and, in 1962, was appointed Deputy Minister of Health and Provincial Health Officer. During most of the years of his service I had the privilege of working closely with him. I have first-hand knowledge of the great contributions which he made.

G. R. F. Elliot



**FACILITIES ENLARGED**

The Health Branch stockroom staff in Victoria has had many new and varied demands bestowed upon them in recent years. Just eight years ago this service operated from a very crowded and insufficient 1,250 square feet in the basement of the Legislative Buildings. After two moves, this service will soon be occupying a new stockroom consisting of some 11,000 square feet. The enlarged facilities of the stockroom will enable the staff to provide British Columbia with a far greater and more efficient service.

COMMUNICABLE AND REPORTABLE DISEASE

Although there were no serious outbreaks of communicable disease in the Province this year (*see* Table VI), 7 human cases of a disease, Western equine encephalomyelitis (WEE), new to British Columbia, were reported from the southern part of the Okanagan Valley. WEE is primarily a disease of wild birds which is transmitted to man and horses by mosquitoes. There is, as yet, no commercially available vaccine that can be used to protect against this disease and the main preventive measure is through expensive and somewhat ineffective mosquito-control procedures.

Seventeen human cases of trichinosis, another disease of animals, occurred as a result of eating smoked sausage adulterated with infected bear meat. It is known that many bears are infected with this condition, and studies are under way to determine how serious and widespread this problem is among game animals.

DIPHTHERIA

Diphtheria continued to be a problem in the Greater Vancouver area. Throughout the Province there were 11 cases reported and 33 carriers were identified. There is no doubt that, if the present level of immunity against diphtheria is not maintained, there would be many more cases in all parts of the Province.

INFECTIOUS HEPATITIS

Infectious hepatitis continues to be a problem with 1,894 cases reported. This last year saw some progress made in the development of laboratory methods which could lead to better control of this disease. A number of laboratories are now able to carry out tests which can differentiate between hepatitis A and B, which appear to be spread in different ways. Permanent active immunization is still not possible and some serious questions are being asked about the real value of the temporary passive immunization provided by immune serum globulin.

RUBELLA VACCINATION PROGRAMME, 1971/72

Only 84 cases of rubella were reported this year, compared with 1,168 cases in 1971. Rubella occurs in marked cycles and it will not be possible to determine the real value of the mass-immunization programme undertaken in 1970 for another seven or eight years. About 85 per cent of the Grade V girls in the Province are now protected and every health unit is trying to ensure that no girl enters her child-bearing years without protection against rubella.

RHEUMATIC FEVER PROPHYLAXIS PROGRAMME

A careful review of this programme during the year showed that several hundred children were taking their medication very irregularly or not at all. These were dropped and there are now about 1,000 children regularly taking oral penicillin to prevent recurrence of rheumatic fever.

TUBERCULOSIS

In 1970 a substantial decrease to 453 in the number of active cases was reported, but it was not possible to state whether this was a trend or simply repre-

sented an abnormal fluctuation. In 1971 there was an increase to 515 and substantially the same number was reported for 1972. This would suggest that the decline in 1970 was simply a fluctuation, so that, contrary to the 1960's, a continuing drop in the incidence of tuberculosis is not being experienced. In part, at least, maintenance of the number of active cases can be attributed to the large number of immigrants involved, particularly from southeast Asia.

The latter point gives rise to concern about immigration policies. Individuals, particularly from southeast Asia areas, come to Canada on a visitor's permit and immediately apply for immigrant status. Even if active disease is found, there is no alternative but to admit them. Since they have not utilized routine channels, there is no sponsor's bond and, therefore, the disease is frequently treated at the expense of Canadian citizens. There are six examples of admissions of such visitors in a two-month period late in 1972.

The time involved in the treatment of tuberculosis has not changed, but the programme in British Columbia continues to treat many infected persons wholly as out-patients, the out-patient figure for 1971 being slightly less than 50 per cent of all persons treated. Of those admitted to hospital, 66 per cent are discharged within four months and only 3 per cent remain in hospital a year or longer. In most instances, this latter group represent custodial care where it has been impossible to arrange adequate placement. This length of hospitalization is one of the lowest in Canada.

As stated in last year's Report, the relatively poor yield of discovery from community surveys has led to a change in the manner in which these are conducted. The concept of "Operation Doorstep" has been abandoned and the surveys are now programmed to offer miniature X-ray facilities to those communities which do not have such service available either in their local health unit or hospital. It is becoming apparent that there is little value in attempting a skin-testing programme in conjunction with these surveys. Previously, a physician travelled with the team and read the miniatures immediately so that the individual was induced to return. He would receive his X-ray report when he had the skin test interpreted. Now, the physician is stationed in Vancouver and the reports of the X-ray are mailed to the patient. As a consequence, only about one-third of patients return to have their skin test read.

The skin-testing in schools has also been abandoned as a routine because the yield of positive reactions was so low, being less than 1 per cent. It is intended, however, to continue periodic testing in schools in high-incidence areas.

The type of solution (PPD) has been changed and a new product is now used. This contains Tween 80, a detergent which prevents adherence of the PPD to the syringe and, thus, a more accurate dose is administered. Its use has produced somewhat larger reactions, but most doubts about tests which previously produced problems, particularly where the interpretation of a positive resulted in prophylactic treatment, have been eliminated.

In reviewing case-finding, it must be stressed that the most productive source is the general hospital, which contributed about 45 per cent of the total number of cases found in the Province. It is therefore imperative that all adult patients admitted to hospital have a routine chest X-ray. With the removal of miniature X-ray equipment from hospitals, this is not being done.

It is also of interest to note that the rate of new active tuberculosis is almost double in the non-Canadian-born as compared with the Canadian-born, and the incidence in Chinese almost equals that in the native Indian population.

Through the Registry, the contact tracing continues to be successful. Thirty-six active cases were found by these means. In all instances, contact had occurred

where the source case had positive sputum. In only two instances was there positive culture only.

The Province continues to enjoy a low mortality rate from tuberculosis. The over-all rate was 1.2/100,000 and, if Indians and Orientals are excluded, the rate was 0.9/100,000. Of the 27 deaths, 13 occurred in persons over 70 years of age.

Work has commenced on the conversion of the fourth floor of the north-south wing of Willow Chest Centre for the cardiac-surgical unit. This has necessitated opening a third ward at Pearson Hospital for tuberculosis patients, with only 31 beds being presently available at Willow Chest Centre.

VENEREAL DISEASE

Venereal diseases are usually contracted through sexual intercourse. Of the five diseases classified as venereal, only gonorrhœa and syphilis occur in this Province. Several other infections, often spread by venereal contact, may also be spread by other means.

The present epidemic of gonorrhœa first started in 1969. The numbers of transient young people have since declined, but the numbers of alienated young people who are living independently and not under parental control have increased. The pattern of the gonorrhœa epidemic has changed from a summer epidemic to a high year-round incidence (*see* Table VII).

There have been several changes in control practices during the year:

- A transport medium has been made for use by physicians, to take routine cultures from females in the sexually active age-groups. This is necessary because many females do not know they are infected. It is difficult to establish a diagnosis on females from a smear only, so the newer culture techniques will greatly increase the ability of physicians to diagnose gonorrhœa.
- In addition to the Darkfield test for syphilis, the direct fluorescent test for *treponema pallidum* (DFA/TP) has been introduced. This test eliminates the need to transport a live organism so that the diagnosis of syphilis can be made from skin lesions by dead bacteria. All physicians in the Province can now test for the diagnosis of syphilis from skin lesions.

Many young people do not understand that venereal disease is controlled by identifying, locating, and treating sexual contacts. They tend to protect their sexual contacts and so encourage the spread of the disease. Consideration is being given to the addition of a health educator to the staff of the Division to develop educational programmes in order to facilitate the control of venereal disease.

An additional male nurse was employed to provide an alternate clinic for the male homosexual population and to establish co-operation with them.

Syphilis remains under good control with only minor outbreaks in this Province. It is, however, being constantly introduced from the outside by sick mariners, male homosexuals visiting cities to the south, single men visiting Mexico and Europe, and transient youths visiting from the United States. The control programme involves identifying the sexual contacts of cases and in turn identifying the sexual contacts of the contacts. They are all treated as though they were infected with syphilis, and so the epidemic is eliminated. By repeating this each time a case of syphilis is diagnosed, it is possible to keep this disease under good control.

LATENT SYPHILIS

Perhaps a third of the persons who acquire syphilis have no outward manifestations of this disease. The disease is then termed "latent," and can only be diagnosed

by a blood test. A VDRL test is used as a screening procedure and the Fluorescent Treponemal Antibody Absorption Test is used for the confirmatory test. Each working-day the Provincial laboratory examines over 600 blood tests submitted by private physicians and venereal disease clinics. In addition, routine blood tests are taken on all persons donating blood to the Red Cross Society and on patients admitted to the veterans' hospitals and the mental hospitals. It is necessary to uncover these patients who do not know they have syphilis and provide them with treatment to prevent the serious late manifestations of heart disease, paralysis, and mental illness.

GONORRHOEA

Gonorrhœa is caused by a specific bacterial infection usually limited to the genital tract. There is a short incubation period of two to nine days, following which the male will have a burning pain on micturation and a urethral discharge. Perhaps four out of five females have no symptoms whatsoever and only one out of five will have a vaginal discharge or a burning pain on micturation. The major problem is that females may not know they are infected and will unknowingly continue to spread this infection until they are identified and brought to treatment. Gonorrhœa is a disease which occurs primarily in single young people. The average age for the male is 22 and for the female it is 20. They are usually not living at home but are living independently away from parental influence.

Although most people are willing to attend a venereal disease clinic, not all are prepared to do so. Further, there are still people who will not attend their private physician for either venereal infections or family planning because they consider them to be social and not medical problems. In order to reach these people and provide facilities for them, several different types of clinics are maintained. In 1970 a nurse was employed to work with young people and since then two nurses have been added under a Federal grant for this purpose. As there has been a decrease in transient youth and an increase in nontransient youth, there has been a trend to less street work and the operation of more clinics to serve this clientele. In the summers of 1971 and 1972, public health nurses throughout the Province extended a medical service to hostels for the medical care of transient youth. Arrangements were made with local physicians to volunteer their services to provide treatment for those medical conditions referred by the public health nurse.

The Vancouver City Gaol has discontinued the practice of incarcerating women charged with soliciting. It was no longer possible to examine them before a gaol appearance the following morning. Arrangements were made with the city police to issue a requirement that a woman charged with soliciting be examined by a venereal disease clinic or physician prior to her Court appearance. This procedure is working well.

A recent report has indicated that some of the penicillins that are being used in treating gonorrhœa have less penicillin available for absorption by the body. This, coupled with the fact that gonococcus strains are showing increasing resistance to antibiotic therapy, has necessitated an increase in the dosage of penicillin and the addition of another drug, probenecid, to delay the excretion of the penicillin. Trobicin has been introduced and found to be an effective drug, but it is still very expensive and has some undesirable side effects.

NONGONOCOCCAL URETHRITIS

Nongonococcal urethritis, or nonspecific urethritis, is an infection of the male which produces a watery or mucous discharge and a pain on micturation. Different viruses have been thought to have been involved with this infection, but none has been proven to be the cause. Examples of these are mycoplasma and conjunctivitis inclusion virus. As with gonorrhœa, very few females show signs of this infection, and yet it is necessary to treat steady female partners at the same time as the male in order to prevent recurrence of this infection in the male. The incidence of this infection in the male parallels that of gonorrhœa. This infection does not respond to treatment with penicillin but does respond to treatment with seven days of sulpha or tetracycline therapy.

GENERAL

Diagnostic and treatment clinics are maintained in Vancouver, New Westminster, Victoria, Prince Rupert, Dawson Creek, Prince George, and Kamloops. In Vancouver, clinics are operated at the City Gaol, Willingdon School for Girls, Oakalla Prison Farm, Vancouver Health Units 1 and 5, the Cool-Aid Free Clinic, the Pine Street Free Clinic, and the Downtown Community Health Clinic. A clinic is operated at Gordon Neighbourhood House, which is primarily used as an alternate clinic for male homosexuals or "gays."

THE PUBLIC HEALTH NURSE AND DISEASE CONTROL

Disease control is a traditional area of concern of public health nurses and, therefore, they are involved in the prevention and control of a number of diseases.

- Tuberculosis control is an important part of this programme, and 8,905 home visits made this year represented a 14-per-cent increase over last year.
- 16,101 tuberculin tests were administered by public health nurses to determine sensitivity to tuberculosis. Most tests were given to contacts of new cases and to selected grades of school children in regions known to have a high incidence of tuberculosis. There were 28 per cent more tuberculin tests done this year than in the previous year.
- Venereal disease visits by the public health nurses were much the same in number as last year and amounted to 4,779 visits.
- Public health nurses supervised 929 children on rheumatic fever prophylaxis treatment.
- In addition, 6,707 visits were made for the epidemiological investigation of diseases and to give prophylactic injections for infectious hepatitis.
- Public health nurses gave 466,034 individual immunizations and 12,964 tests at special clinics and at child-health conferences held at neighbourhood health centres. (See Table VIII for the contribution of public health nurses in immunizations.) The number of immunizations is down from last year as the extensive rubella campaign has now been completed. Rubella vaccine is now available as part of the routine immunization schedule and is given to children when they are 15 months old.
- Immunizations done by the public health nurses provided a minimum saving to the British Columbia Medical Services Plan of about \$934,000. These immunizations might otherwise have been charged to the Plan at a rate of \$2 per dose.

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

This has been another interesting and challenging year for the Division of Environmental Engineering. Each member of the staff has generously contributed to the achievements made. A sincere effort has been made to give more time to the health units, especially by way of field visits. The programme to update the records for the public waterworks systems got off to a good start, but was hampered somewhat because of staff resignations.

It was apparent from numerous discussions with the Medical Health Officers throughout the Province that they shared the concern of this Division regarding the need for "preventive" measures to be taken in our struggle with environmental control and management. While regulations may be unpopular with many people, they do assist to preserve the environment. The members of this Division have cooperated with the health unit staffs in applying the regulations in a sensible and reasonable manner. As our environment becomes more hazardous for living, it will mean that more of people's activities must be regulated.

In accordance with the *Health Act*, approval of plans and specifications for all public waterworks systems proposed for construction in British Columbia is the primary divisional function. A secondary function is that of consultant to the field staff on subjects which include private water supplies and treatment, sewage and solid-wastes disposal, swimming-pool design review and operation, subdivision approvals, and water-quality studies.

Although there were only 104 official visits to the health units throughout the Province this year, this continues to be one of the most important roles for the engineers, since it affords them the opportunity to gain field experience which makes them useful as consultants. Records of various kinds are kept in the files of this Division, and include water chemical analysis, master plans for waterworks systems, fluoridation, public swimming-pools, and pollution control permits.

Before any part of a public waterworks system proceeds to construction, a Final Certificate of Approval from the Health Branch must be issued to the owner. This year the number of approvals issued was 538, an increase of 158 over last year. The publication of a waterworks design manual has not yet reached the printing stage, but work is proceeding on it.

Water quality for municipal water supplies continues to be a concern to this Division. While treatment with chlorination is often sufficient to make the water potable, many supplies are being affected by various activities in the watershed which contribute to the turbidity, colour, and other æsthetic features. It is hoped that the "Task Force on Multiple Use of Watersheds of Community Water Supplies," set up by the Ministers' Environment and Land Use Committee, will be effective in its efforts to maintain good æsthetic water qualities for many of the British Columbia communities.

Another major role of the Division is to offer constructive advice to municipal engineers and waterworks superintendents regarding the operation of their water

systems to ensure safety to public health. This year 137 official visits of this kind were recorded.

Swimming-pool plans have been reviewed on behalf of the Medical Health Officers who are responsible for issuing approval for all public swimming-pools in accordance with the Swimming-pool Regulations. It is estimated that 74 public swimming-pools have been reviewed by the Division this year.

Another way in which the Engineering staff is able to keep in touch with current practices and new equipment is through attendance at conferences and short courses, as well as being involved in projects which require background reading from professional literature. In this regard, members of the staff were very busy this year, two of them appeared on a television series which dealt with the environment. Two members of the staff also took part in an open-line radio programme which discussed sewage treatment. On 12 other occasions members of the staff spoke to various groups such as schools and community service groups on subjects relating to public health engineering.

During the year, consultant services were given to a district municipality in solving a swimming-pool operation problem. On another occasion one staff member visited 19 fish hatcheries in the western United States in connection with a project in which he acted as consultant to the Department of Public Works on a proposed \$5,000,000 fish hatchery.

The Ministers' Environment and Land Use Committee has requested various Government departments to study and report on different problems affecting environmental control. This Division has been represented on three different task forces, namely, watershed control, harbour water-quality studies, and indiscriminate dumping of garbage. In addition to these studies, members of this Division were included in the committee which drafted Provincial Building Codes (cross connection control), and a committee dealing with sewage-sludge utilization (Iona Sewage Treatment Plant). The Division has continued with its activity in the water and waste operators training course at UBC. Four members of the staff gave lectures at the short course and the Assistant Director of the Division acted as co-ordinator for the school.

Areas in which staff members gained further training included a short course on incineration, another on solid-waste recycling, and a third on well (groundwater) design and theory.

PUBLIC HEALTH INSPECTION

This Division's role is to assist the local health departments to provide a comprehensive environmental health programme for the people of British Columbia. The preventive health aspect of the Public Health Inspector's job has been reinforced by the following activities (*see* Table IX):

- New Food Premises Regulations became effective April 1, 1972, providing an up-to-date code for the food trade in British Columbia. One of its main features is the introduction of the permit system for restaurants and catering businesses. The permits will be issued annually by the Medical Health Officer when he is satisfied that the applicant has sufficient knowledge of modern food-handling practices and adequate equipment to enable him to operate in a safe and sanitary manner. The first permits will be issued April 1, 1973, thereby giving operators ample opportunity to bring their premises up to the required standard.
- The Camp-sites Regulations were amended in October of 1971, making it mandatory for the operator to have an annual permit from the Medical

Health Officer. The permit system has assisted with the upgrading of campsites for the travelling public.

- A major revision of the procedure manual for public health inspectors was completed this year.
- Site inspections by the public health inspectors prior to the development of new subdivisions, and the requirement under the Sewage-disposal Regulations calling for a permit from the Medical Health Officer for the installation of a private sewage-disposal system, has reduced the number of health hazards resulting from poor installations.

EDUCATIONAL ACTIVITIES

The Division of Public Health Inspection organized a one-week course for 42 public health inspectors in February, with the main emphasis on food control. The course also dealt with a number of other subjects, including community care facilities, noise control, pesticide control, and the use of the mass media in education.

Fifteen students from the public health inspectors' course at the British Columbia Institute of Technology were given field-training in various health units during June, July, and August.

Public health inspectors have worked with the food-service industry and the Department of Education to educate food-service workers in safe food-handling techniques.

The Director of the Division has worked with the Canadian Restaurant Association, Provincial and municipal health officials, and the Department of National Health and Welfare in the preparation of a National Sanitation Code for Canada's food-service industry. He was invited to attend a seminar in Ottawa to assist with the completion of the code.

As well as serving on the Advisory Committee for the public health inspectors' course at the British Columbia Institute of Technology, the Director of this Division served as a supervising examiner for the Board of Certification of Public Health Inspectors, established by the Canadian Public Health Association. The examinations in western Canada were held in June and September in Vancouver. A total of 23 candidates passed the examinations.

OCCUPATIONAL HEALTH

RADIATION PROTECTION

This year, with the establishment of requirements for accreditation of radiology facilities under the Provincial *Medical Services Act*, it became necessary for the owner to produce a current radiation survey report indicating that his X-ray equipment met the necessary safety codes for radiation protection. As there is no other body in the Province equipped to provide this service, the Radiation Protection Section of the Occupational Health Division was asked to assist with this task.

In acute general hospitals there are 350 medical X-ray units which are being surveyed regularly as part of the Division's safety programme. It is estimated that, under the regulations of the *Medical Services Act*, an additional 200 units will be added to the list. This is equivalent to more than a 50-per-cent increase in the Division's annual inspection programme for the medical profession. In order to survey the new units a major reorganization of priorities and manpower will be required.

In addition to the above, approximately 950 X-ray units are surveyed for the dental, chiropractic, and veterinarian professions, and for research and industry.

The continuing proliferation of microwave ovens throughout the Province has necessitated a stepped-up programme that could ultimately involve the public health inspectors as surveyors. A pilot project was carried out in the Victoria-Saanich area. Preliminary results of this survey indicate that almost 50 per cent of microwave ovens are leaking excessive radiation and are a potential health hazard. More survey instruments are to be acquired in 1973, and these will be used by the various health units throughout the Province.

During the past five years, United States nuclear submarines visited Esquimalt and Nanoose Bay of Vancouver Island. Assistance has been given to the Canadian Navy in the monitoring of air and sea water to ensure that there was no release of radioactive material during the time the submarines were in port. The visits have become more frequent and, as tentative dates only are known in advance, the Division's regular survey programme has been disrupted. Four visits out of eight scheduled were carried out in 1972, with 301 air and 70 sea-water samples being checked.

In January 1972, the Department of National Health and Welfare, Ottawa, issued a warning concerning radiation hazards from ionizing radiation-producing devices used in high schools as educational aids. In view of this, visits have been made by inspectors to a number of high schools throughout the Province. The opportunity was taken to survey school equipment and to discuss any hazards with the teachers concerned. Sixteen secondary schools have been visited in Victoria, Duncan, Nanaimo, Trail, Rossland, Castlegar, Vancouver, and Cranbrook. A number of old X-ray tubes have been located, together with other devices which have been found to emit excessive amounts of radiation. The teachers have co-operated in most instances by removing the terminals of the X-ray tubes so that they cannot be activated. Other devices which emit excessive amounts of radiation have been withdrawn from use or are being operated at lower voltages to reduce the field. In some instances they have been installed in shielded boxes.

The Radiation Protection Section was involved in a number of unusual investigations, some of which are briefly described below:

- The radioactive source storage room at HMC *Dockyard*, Esquimalt, containing several cesium and radium sources, was flooded when a water main broke.
- A road transport company in Burnaby received a trailer from eastern Canada which carried two shipping flasks containing 170,230 curies of cobalt-60, with a thermal decay heatload of over 2.5 kilowatts. An inspection revealed that the shipping flasks had been completely surrounded by a shipment of cardboard cartons containing flight bags, and intense heat resulted. The Atomic Energy Control Board advises that new transport regulations, to be published soon, will prevent such situations occurring. In addition, Atomic Energy of Canada, supplier of this cobalt-60, will print warnings in future not to overload a trailer in which sources generating significant quantities of heat are being carried.
- "Coin amusement" firms in Vancouver have been importing a "laser game" which is installed in billiard halls and restaurants. On learning of the presence of these machines, and the possible hazards from lasers, an inquiry was made. The sale of laser machines will eventually be controlled by regulations under the *Radiation Emitting Devices Act*.

The Radiation Protection Section has acquired a \$12,000 nuclear data, multi-channel analysing system capable of examining and determining the radioactive

elements present in a sample, e.g., air, water. It is also useful in environmental surveillance programmes. In case of accidents, it will provide the necessary information so that the proper protective measures can be instituted. The analyser can determine the radioactive build-up from fallout in soil and plant life, and it will be useful for monitoring TRIUMF (Tri University Meson Facility).

The reconstituted Radiological Advisory Council, and its several committees, have been meeting regularly under new terms of reference which require it "to develop and maintain an over-all plan for radiological services in British Columbia hospital facilities, to establish priorities, and to develop methods of review to control over-utilization." Three permanent committees have been established—the Equipment and Planning Committee, the Functional Programme Review Committee, and the Radiation Safety Committee. In addition, four *ad hoc* committees to establish guidelines for angiography, tomography, mammography, and ultrasound have been set up.

Since its reactivation in April of this year, the Radiological Advisory Council has had six meetings, the Equipment and Planning Committee 12 meetings, and the Functional Programme Review Committee four meetings.

At the request of the British Columbia Hospital Insurance Service, the Radiological Advisory Council has reviewed and recommended acceptance of 50 applications for grant from Provincial hospitals toward capital cost of radiological equipment with a gross value of \$518,192. The Director of Occupational Health and two members of the Radiation Protection Section are members of the Council and several of the committees.

OTHER ACTIVITIES

Apart from radiation protection services, environmental activities mainly involve the Director of the Division. The Committees on Pesticide Control have been very active this year and requests for medical assessments from the Pollution Control Branch with regard to air-emission applications have increased manyfold.

With the TRIUMF (Tri University Meson Facility) project nearing completion, the Division is still very much involved with the development of a proper disposal site for radioactive waste. A committee from the Atomic Energy Control Board, Ottawa, made a preliminary inspection of a proposed site in the Province in May 1972.

The Division, as in previous years, continued to provide consultative services on environmental and industrial hygiene problems to local health departments, other departments of Government, and private industry.

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 was established to provide equipment, drugs, and supplies to patients who were trained to operate an artificial kidney in their own home. The procedures and equipment are improving, and a major change has been made to reduce blood-clotting problems. Some patients have a problem with a catheter when the latter is placed in an artery and vein. By surgically connecting an artery and a vein and using needles to draw off the blood and return it after cleansing in the artificial kidney, complications have been markedly reduced. This has meant a modification in equipment, and retraining of patients, so that fewer patients have been prepared for the home service.

There are now 68 patients at home on hæmodialysis, and this is roughly the same number as a year ago. It costs an average of \$236.00 a month to maintain the patients on hæmodialysis. There are three training centres to train patients for hæmodialysis—two in Vancouver and one in Victoria. In addition, there are two support centres located at Kamloops and Trail.

Not all patients are suitable for hæmodialysis and it is possible to maintain some of these on peritoneal dialysis. Because machines and concentrate have not been developed, the procedure is time-consuming and laborious. It does serve as a method of allowing the patient the freedom of being at home. However, improved methods will soon be available, and peritoneal dialysis is probably a temporary method. There are currently 15 patients at home on peritoneal dialysis, and the average cost of maintaining a patient at home is \$607 a month.

Patients deprived of all kidney function often have generalized disease, and their life expectancy is diminished. This is a general statement that explains the loss of nearly one patient a month. On the other hand, those patients who are relatively healthy are able to lead quite normal productive lives. One patient no longer had need of the service because, after a very prolonged period of time, his own kidneys regained adequate function.

Not all patients can be trained for dialysis in the home. It has been necessary to supply some patients who are treated in hospital with drug subsidies amounting to \$3,150, and transportation subsidies of \$6,130.

Some patients are suitable to receive a kidney transplant. Fresh transplantable kidneys are not readily donated, so that the opportunity to receive a kidney transplant with a kidney that has blood and tissue matching does not occur frequently. There are several patients who are functioning on transplanted kidneys, and it is necessary to supply some of them with immuno-suppressive drugs.

This service is being gradually expanded to provide supplies for other patients who can be cared for at home. For example, there is one patient with Crohn's disease who must receive most feeding intravenously. The maintenance cost is \$287 a month. Although it may seem costly to maintain these patients, it is much less than the \$1,500 or more that it would cost to occupy a hospital bed for a month. It also allows the patient the freedom of living at home.

The Service has been improved during the year. In order to get started, arrangements were made with the hospitals to supply drugs and other supplies to the patients. These are charged to the Service. Last year a stockman was employed, and this year a warehouse was rented and stocked. It started to function as a supply centre for artificial kidney machines, concentrate, and supplies. A clerk was added to the staff to maintain the records. The training centres are still supplying the staff to evaluate homes, start patients at home, and provide the support services for the home patients, with this Service providing their travelling expenses.

This Service operates with the assistance of two 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 make recommendations concerning the equipment and supplies to be used.

POISON CONTROL PROGRAMME

There are now 57 hospitals participating in the British Columbia Poison Control Programme. More than 8,000 cases of poisoning, either accidental or intentional, were reported during the year. From the reports received, the information cards produced by the Faculty of Pharmaceutical Sciences for the Health Branch were a great help in determining the treatment required. The Provincial reference centre planned for the Vancouver General Hospital is still not in operation due to lack of space and staff-time to operate it on a full-time basis.

HYPOGAMMAGLOBULINEMIA PROGRAMME

At the end of the year, 11 people with this uncommon medical condition were receiving regular monthly injections of immune serum globulin at no cost to themselves. The Health Branch is fortunate in having the services of specialists from the Faculty of Medicine and the Red Cross Blood Transfusion Service to act as consultants to this programme and to advise on individual applications where there may be some question as to whether immune serum globulin will be an effective remedy.

SPEECH AND HEARING SERVICES

During the past year the concepts of the services offered under the title "Speech Therapy" have undergone revision. This is in keeping with the development of new training programmes in Canadian universities for the disciplines of speech pathology and audiology. These programmes prepare personnel to undertake diagnosis, treatment, and management of the population with disorders of communication, and require that graduates have knowledge of the normal development of speech, language, and hearing, and the processes which disrupt communication and the techniques of habilitation and rehabilitation.

Within the British Columbia Health Branch these trends are reflected primarily in the appointment of an audiologist as Director of Speech and Hearing Services. In addition, further placement of speech pathologists in local health units has continued with the concurrent expansion of programmes. The role and function of speech pathologists in a public health setting is emerging and evolving as the needs of the population become known. The primary aim at present is to develop programmes for the identification, management, and prevention of communication disorders in children during the pre-school years with ongoing diagnostic and rehabilitation services for other age-groups in the population, whenever and wherever possible. A major portion of the time of the speech therapy staff is spent in developing and carrying out in-service training programmes for public health nurses and primary teachers so that they may develop skills in identifying and referring those children who exhibit handicapping problems in speech and (or) hearing.

Highlights of the service in 1972 were as follows (*see* Table X):

- A pilot project was carried out in five health units with selected groups of public health nurses from all areas of the Province during the past year to

assist them in gaining additional skills in screening the hearing of young children.

- The Provincial Speech and Hearing Planning Committee has continued to discuss the necessary speech and hearing services as required in British Columbia. A *Hearing-aid Regulation Act* was passed in 1971. It provides for the licensing of hearing-aid dealers and consultants. A Board was established to administer regulations under the Act.

HEARING CONSERVATION, PLANNING CONSIDERATIONS

In recent years, advances in otology, audiology, and education have emphasized the importance of early detection, rehabilitation, habilitation, and education for the acoustically handicapped. These advances have resulted in the establishment of hearing conservation programmes throughout the nation and the world. Current planning includes provision for the development of a comprehensive concept in hearing conservation. A location will be selected in the near future for a pilot project encompassing the following public health planning principles and considerations:

- Prevention.
- Mass screening.
- Assessment, to establish the type, severity, and cause of the disorder.
- Medical consultation and treatment.
- Rehabilitation, including selection and fitting of prosthetic devices; speech, hearing, and language therapy and education.

Particular attention will be given to establishing the feasibility of developing programmes utilizing mobile units and (or) permanent facilities within health unit areas. Included within the general planning principles will be specific provision for

- mass identification audiometry procedures, including extended in-service training for nurses, speech therapists, and volunteers;
- comprehensive diagnostic audiologic assessment;
- establishment of a differential diagnostic, treatment, and management concept, including audiologic, medical, nursing, social, speech, and hearing rehabilitation and education;
- provision for continuing professional management and supervision of clinical cases.

Under present planning the programme will utilize controlled, sound-tested environments which will overcome the frequently encountered problem of environmental ambient noise, which invalidates hearing measurements. Modern electronic instrumentation will provide comprehensive diagnosis and assessment of hearing disorders. The instrumentation will be used in a variety of applications. It is used to maintain calibration standards for audiometers and auditory trainers. It can be used to conduct sound studies which will identify excessive noise levels which are potentially detrimental to the hearing mechanism and (or) instructional programme. Instrumentation will provide a basis for scientific hearing-aid evaluation and fitting procedures. The programme will provide for comprehensive assessment of infants and pre-school children, including selection and fitting of prosthetic devices, when indicated, and home training programming, when recommended. Also provided will be hearing conservation programming for noise-induced hearing problems. The programme will include a comprehensive data collection and retrieval system which will lend itself to programme accountability, research, and statistical data.

MOTOR-VEHICLE ACCIDENT PREVENTION

Health Branch staff, working with the British Columbia Medical Association, continued to provide a consultative service to the Motor-vehicle Branch in the field of medical fitness to drive. The booklet *Guide to Physicians in Determining Fitness to Drive a Motor-vehicle* was completed and has been approved by the British Columbia Medical Association. The Canadian Medical Association has also accepted the British Columbia guide as the basis for Canada-wide standards.

COMMUNITY CARE FACILITIES

This is the first full year that the Health Branch has been responsible for the supervision of community care facilities. During the year many changes were made in order to improve the efficiency of this section of the Health Branch's operations and the level of care provided in these licensed facilities.

Amendments to the *Community Care Facilities Licensing Act* were made which more clearly define a community care facility and set out the responsibilities of local authorities in supervising them.

In recognition of the increasingly important role of education as it relates to facilities providing services to children, an amendment to the Act permits an additional member of the licensing board appointed from the Department of Education.

It is planned to decentralize the control of community care facilities over the next few years. As an initial step, the licensing board's administrative staff, who have until now functioned as inspectors, have become specialist consultants, and the field staff of the Health Branch have been given the task of inspecting licensed facilities and facilities for which applications for new licences have been received.

Many requests are received for listings of licensed facilities from persons who are looking for accommodation and from groups who are undertaking studies in this field. In order that these requests can be met promptly, all of the information available on licensed facilities has been placed on punched cards, and very shortly it will be possible to provide up-to-date information on request.

Throughout the year, there was a steady development of new and larger facilities for aged persons through grants under the *Elderly Citizens' Housing Aid Act* and private enterprise. Facilities for mentally disabled persons continued their steady development. However, the greatest increase occurred in day care services for children.

EMPLOYEES' HEALTH SERVICE

In a recent study on "Quality in General Practice" reported in the *Journal of the Royal College of General Practitioners*, it is pointed out that Canadian women live five and one-half years longer than men. This gap in life expectancy is increasing, and the article suggests that men may be neglecting their health at the prime of life so that they suffer more severe illness after the age of 45 and die sooner. The article further states "we cannot be sure but the data available strongly suggest the need for an industrial (occupational) medical service to give men easier access to medical care."

The Division of Occupational Health has been able to obtain the services of another full-time physician, and it is hoped to introduce, in the near future, a programme of periodic medical examinations for senior male Civil Service personnel. Later, it is hoped to extend the programme to other staff on a voluntary basis.

Efforts have been made to employ a full-time counsellor to implement the Government programme on alcoholism. This is an urgent problem as the direct and

indirect loss due to absenteeism, accidents, bad decisions, discharges, dissention, early retirement, lowered work efficiency and morale, overtime payments, and unfavourable public relations in the community account for approximately \$1½ million for a work force the size of the British Columbia Civil Service.

Numerous services were offered to employees in the Vancouver, Victoria, and Essondale areas. For example, in Vancouver the occupational health nurse attended seven locations on a regular basis and dealt with 4,226 visits by employees during the year (October 1971 to September 1972). The services rendered included such items as treatment of illness or injury, counselling, medical examinations, and immunizations.

In Victoria, the Occupational Health Unit was visited 4,657 times by employees to receive services of one kind or another.

The programme at Essondale and Woodlands is somewhat different from the above because most patients are seen mainly on a referral basis. The usual reasons for referral are

- pre-employment health interview;
- return to work after illness or injury;
- frequent health problems;
- health problems which interfere with ability to work.

Approximately 2,340 employees were seen during the year. Many treatments for minor illness or injury are carried out at the first aid stations scattered throughout the mental hospitals.

In addition to the above, Occupational Health staff visit Government departments on a regular basis in order to study the type of work performed and the possible hazards involved. It is necessary to carry out special inspections in areas where industrial hygiene problems or hazards are occurring.

The Civil Service Commission Screening Committee, which meets from time to time, is concerned with the placement of disabled employees. The Director of Occupational Health is the chairman of this committee, and other members are Chiefs of Classification and Recruitment (Civil Service Commission) and the Administrative Assistant to the Chairman of the Civil Service Commission.

COMMUNITY HEALTH NURSING *

The public health nurse is a member of one of the professional groups working in the broad field of public or community health. She has dual preparation, which includes the knowledge and skills essential for basic nursing and the special skills of public health practice. Her activities (*see* Table VIII) are concerned with the promotion and maintenance of health, prevention of disease and disability, and provision for comprehensive care of the sick and disabled.

Prevention in public health may be categorized as follows:

- *Primary*—which involves preventive procedures such as immunizations against certain communicable diseases, as well as such matters as anticipatory guidance to mothers of young children.

* Services provided by public health nurses under the jurisdiction of the Provincial Health Branch. This report does not include services provided by Greater Vancouver, Victoria, Esquimalt, Oak Bay, and New Westminster, except in the school health programmes.

- *Secondary*—which involves case-finding, and early diagnosis and treatment through individual assessment and screening programmes to enable corrections of defects such as hearing, vision, emotional illness.
- *Tertiary*—which involves the reduction of disabilities through treatment and care, as in the home nursing programme. Through this service the public health nurse provides care for persons with physical and emotional problems. She assists in arranging for the rehabilitation of persons with certain disorders, thus permitting many individuals to be maintained in their home settings at their maximum level of “wellness.”

The public health nurse's participation in the public health programme may be described as follows:

She is competent in assessing the family and particularly in relating the cause and effect of individual health problems to the total family situation. However, service is not limited to any segment of society or age-group but is provided on a uniform basis throughout the Province.

The public health nurse contributes to the assessment of community health needs, and to the planning and organizing of services to meet these needs.

She is able to extend her professional skills to more people by utilizing assistants such as registered nurses, health unit aides, volunteers, and incentive trainees for routine activities.

Public health nursing service is provided within the established policies of the Health Branch so that a similar public health nursing service is available to all residents in the Province.

In the central office, the Division of Public Health Nursing provides:

- Nursing consultant service to assist health units in evaluating their programmes so that services can be provided efficiently and economically with the available personnel.
- Planning and arranging for the continuing professional training of public health nursing staff.

HOME CARE

The quality, quantity, and cost of health care is of increasing concern to all. It is, therefore, most important that provisions be made for high-quality care at levels most appropriate to meet the total health needs of people requiring it. Home care programmes are designed for persons who require active medical, nursing, and rehabilitative services, but do not need the expensive facilities of an acute hospital or other institutions. They are co-ordinated community-oriented programmes available to selected patients in their own homes in order to shorten the length of their hospital stay and to prevent unnecessary hospitalization. They thereby preserve the home and family unit and meet the health and social needs of a segment of the population whose health care in the community would otherwise be inadequate. Under the direction of his private physician and the co-ordination of the public health nurse, the patient is provided with nursing, social work, physiotherapy, homemaker, meals-

on-wheels, and other ancillary services according to his needs and to the resources of the area.

- Home care is available in 114 communities to over 80 per cent of the population in Provincial health units in British Columbia. Service in the Kamloops area was extended during the year to include Brocklehurst.
- Those sections of the Province not receiving service are, in the main, isolated areas with a scattered young, active population.
- Nursing and social work services are provided at no cost to the patient. Other services, if available, are provided through insurance plans or are paid for by the patient according to his means.
- Health unit nursing staff made 88,903 home nursing visits during the year, 78 per cent of these were to patients 65 years of age and over. This was a 7-per cent increase over 1971.*
- In addition, there were 11,178 nursing visits on behalf of patients on treatment at home for recognized psychiatric or emotional problems, a 3-per cent increase over the previous year.*

PUBLIC HEALTH PHYSIOTHERAPISTS

Five part-time public health consultant physiotherapists, serving in eight health units, made 1,466 visits, assessed 516 patients, and carried out 841 reassessments in connection with home care services. In addition they served as consultants to public health staff, physicians, the staff of personal care homes, and acted as liaison with other rehabilitation facilities.

SPECIAL HOME CARE PROJECTS

A special home care project to serve persons discharged early from the acute general hospitals in the Coquitlam-New Westminster area completed its first year of operation. All services, including nursing, physiotherapy, homemaker, meals-on-wheels, medication, and supplies were paid for by Provincial Health Branch funds. In this programme, 429 patients received 4,419 days of care at an average cost per patient-day of \$11.83. This cost of replacement days is approximately one-quarter the cost had the patient remained in an acute hospital. Sixty-three per cent of these patients were between the ages of 20 to 64 years, and 32 per cent were 65 years or over. They were almost equally divided among surgical, orthopaedic, and medical diagnoses.

In May, two further home care projects were initiated to serve three general hospitals in Victoria and the one acute hospital in Kamloops, and although the cost per patient-day is slightly higher in the early stages of the operations, the success of the programmes in providing alternative, less costly, and yet a high-quality type of care is quite apparent. The physicians, the home care staff, and particularly the patient and his family have been extremely pleased with the new programme.

MENTAL HEALTH

While the Mental Health Branch has prime responsibility for the provision of mental health service in the Province, mental health is recognized as an integral part of a generalized public health nursing programme. Close co-operation is maintained between the personnel of the two branches.

* The above visits to persons requiring nursing service for physical or emotional reasons represent a cost saving to Medicare of more than \$100,000.

In this part of the programme the primary objective of the public health nurse is to prevent the development of mental illness by identifying individuals who show early signs of potential illness so that assistance can be made available at an early stage. During their routine work, public health nurses find families and individuals in crisis situations so that the nurses are in a particularly strategic position to provide help where there is a high risk factor for mental breakdown. Special efforts are made to identify potential problems at the time of home visits, at child health conferences, prenatal classes and school, youth and geriatric clinics. Activity is summarized as follows:

- 7,369 visits were made for primary prevention, of which 46 per cent were for adults, 45 per cent for school-age, and 8 per cent for pre-school children.
- In addition, 11,178 visits were made for secondary prevention to patients under care for emotional disorders. Pre-school children received 6 per cent of the visits, school-age children 30 per cent, and adults accounted for the 64 per cent of the visits which were made for therapeutic reasons. These visits represent a saving of around \$20,000 to the medical care plan.
- In all, mental health visits, both primary and secondary, totalled 11,178 for an over-all increase of 4 per cent over last year.
- A total of 184,179 visits was made to homes which provided the public health nurses with opportunities for case-finding and for mental health counselling, which is an integral part of health care service.

YOUTH SERVICE

This year an influx of youth into the Province during the summer months again appeared imminent. As this could lead to an increase in communicable diseases, particularly venereal disease, arrangements were made once again with the assistance of the Division of Venereal Disease Control to prepare for such an eventuality. Special kits of literature and medical supplies were made available to all health centres, and records were kept of the services rendered during the period June through August.

During this period, 535 young people sought assistance. This represented a 30-per-cent reduction from last year. Slightly more than half (282) presented themselves at health centres, while 263 were seen at hostels and other similar settings. This contrasts with the situation a year ago when only one-third came to health unit centres. Fifty-two per cent were over the age of 19 years, while only 7.6 per cent were below the age of 16 years. There were 9 per cent more males than females seeking attention.

Of the total number of young people requesting help, 237 had minor illnesses, injuries, intestinal disorders, skin infections and rashes, 90 suspected venereal disease, and 55 needed health or financial information.

Minor problems were treated, health counselling given, and referrals made to social workers, physicians, and out-patient departments as indicated. It is believed that this special programme prevented more serious problems from developing.

The Central Vancouver Island Health Unit and the Northern Interior Health Unit provided most of the service to transient youth this year.

ADULT AND GERIATRIC SERVICES

Another important part of the work done by public health nurses is with adults and elderly citizens. During 1972 a total of 47,543 home visits was made to adults for general health appraisal, advice, and referral for medical and other types of care. These visits resulted in many persons obtaining early diagnosis, care, and treatment,

thereby preventing the need for extensive medical and institutional care at a later date. The number of visits increased one-third over the past year. Adults receive special attention under special programmes as noted elsewhere in this Report, particularly in relation to communicable disease control, home care, maternal care, and in general family health service.

A few health centres have been able to establish geriatric clinics where elderly people come for general health appraisal by the public health nurse and have hearing, vision, urine, blood pressure, glaucoma, and other screening tests. They also receive nutrition counselling and general health advice. Many persons seen are referred to appropriate agencies or physicians for further care. More geriatric services need to be developed as additional public health nursing staff become available to organize clinics in appropriate centres.

Patients over the age of 65 received 68,747 home visits for home nursing service, 1,285 mental health therapeutic visits, as well as 11,215 visits for general health supervision. In all they received 81,247 home visits, and this figure represents the largest number of home visits to a specific age-group.

Professional public health nursing services were provided by telephone to adults, as illustrated by the 207,968 calls made during the year.

SERVICE TO INDIANS

Certain Indian reserves receive public health nursing service from health units through a special arrangement made with the Medical Services Directorate of the Department of National Health and Welfare.

- Public health nurses now serve 72 reserves with a population of 9,020 Indians, or approximately one-third of those on reserves.
- 16,455, or just about one-third of the total Indian population of 49,022 living in British Columbia, now live off the reserves and receive the same public health services as the non-Indian population. In all then, Provincial public health nursing service is given to approximately 50 per cent of all Indians in the Province, the remainder being provided for by the Medical Services Division of the Department of National Health and Welfare.
- Almost all Indian children living on reserves now attend local schools and receive school health service from the health unit public health nurse.
- Medical Services are beginning to provide auxiliary Indian health workers, such as community health workers and aides, to assist public health nurses in their work with the Indian people. It is believed that supplementary assistance will help the Indian people gradually to raise their health status.

AUXILIARY WORKERS FOR PUBLIC HEALTH NURSING PROGRAMMES

In spite of a general population increase and resultant high and continually rising case loads, it has been possible for public health nurses to continue to provide a good quality of nursing service by utilizing auxiliary workers trained on the job to do work of a technical nature. In this way public health nurses can find more time for professional activities.

- During the year, volunteers donated 10,930 hours of their time to the health services. This represents about 1,500 working-days and 10,494 direct services to individuals.
- Auxiliary workers, health unit aides, volunteers, and incentive programme trainees together gave a total of 65,187 direct services to individuals. These services are primarily screening procedures such as vision and hearing screening for pre-school and school children (*see* Table XI for details).

MATERNAL AND CHILD HEALTH

Classes for expectant parents continue to be popular as evidenced by increased attendance of both prospective mothers and fathers. The classes consist of a series of discussion groups in which the public health nurses centre teaching around the physical and emotional changes during pregnancy, normal development of the foetus and infant, nutrition, and changing family relationship to promote positive mental health. Recommended relaxation exercises are discussed and practised. In summary:

- Classes were held at 74 health centres where 417 series of classes were presented to 5,188 mothers, representing an 11-per-cent increase of participants over last year. The number of fathers participating was up 24 per cent, with 2,504 attending the series. The over-all class attendance was 27,692.
- The interest and importance of family health education in relation to the birth of a new baby are well illustrated by the fact that three-quarters of the series had both parents enrolled. It is estimated that well over 60 per cent of all new mothers attend classes prior to the birth of their first baby.
- In addition, public health nurses made 3,672 prenatal and 19,796 postnatal visits to mothers to assess the babies' progress and discuss maternal and child care. The figures are somewhat lower than those for 1971.

INFANT AND PRE-SCHOOL

Many potential health problems can be recognized in infancy and early childhood and prompt attention will often prevent these from becoming serious at a later date. The public health nurses, therefore, place a great deal of emphasis on early case-finding and arranging for treatment and care. Public health nurses are involved in a number of programmes where they have the opportunity of assessing the health status of young children—in special clinics, child health conferences, kindergartens and play groups, as well as in the home situation. Screening programmes include testing for hearing loss, vision, retardation, and deviation from the normal growth and development patterns. Most health units are now using the standardized Denver Development Screening Test which was designed for use in assessing motor, language, and social development. More special screening clinics are being set up for the 3- and 4-year-old child. A great deal of social and physical damage can be prevented by early treatment, and counselling of parents by specialists and by the public health nurse.

- 80 per cent of newborn infants received one visit from a public health nurse during the important first six weeks of life, about the same proportion as for 1971. Additional visits were made to children at "risk" for conditions such as suspected health abnormalities and to give advice on child care.
- Public health nurses made 34,260 visits to homes of infants for general health assessment and counselling. This was a slight increase over the 1971 figure.
- 16,785 infants attended child health conferences where public health nurses provided 52,657 individual services and counselling sessions. This was slightly below the figure for 1971.
- 7,590 pre-school children attended child health conferences for assessment, health counselling, and immunizations for a total of 85,411 individual ser-



A public health nurse instructs a prenatal class in the stages of pregnancy and birth. Prenatal classes are held regularly throughout the Province.

vices. While the number of pre-school children attending child health conferences increased this year, individual services were somewhat fewer.

- 28,930 home visits were made by public health nurses on behalf of pre-school children for reasons of physical or emotional health, about the same number as last year.

SCHOOL HEALTH

The focus of the school health programme is primarily preventive—the provision of health education, a healthful environment, and personal health services—all designed to promote knowledge, attitudes, and abilities for healthful living and to prevent or seek early treatment for conditions which might prevent the child from reaching his potential.

The school setting gives a unique opportunity for preventive health measures because of the large numbers of children in their formative years who are readily available for health education and care. At 5 years of age approximately 70 per cent of children attend kindergarten, and by 6 years of age virtually 100 per cent are under the care and supervision of the school health team.

The public health nurse is the health professional most accessible to the schools and has the primary responsibility for bringing to the pupils the services of a health unit. Through her concurrent involvement in the community she also brings an awareness of its needs and resources, has ready access to homes, and knows many of the families.

Other members of the health unit staff contribute to the programme—the health unit director, the public health inspector, the preventive dentistry team, and in some areas the speech therapist. Through the public health nurse services are made available from the community mental health team and from many local and Provincial health and welfare agencies. Public health nursing auxiliaries play an increasing role in assisting the nurse with routine screening procedures.

In keeping with the concept of prevention and early remedial treatment, the emphasis on pre-school screening has continued this year. Health assessment of 4-year-old children has given an opportunity for remedial work with the child and parents before school entry. When the child enters school, either Kindergarten or Grade I, the nurse discusses with the school principal any factors which may influence the child's adjustment to school. Through the "pre-school round-up" she makes a special effort to see children who are about to enter Grade I and to have immunizations brought up to date. Table XII shows that a high percentage have basic immunization before entering school.

Reinforcing immunization is provided in Grades I, V, and X. Table XIII gives the immunization status at the end of Grade I and shows that a high level of protec-



A public health nurse conducts a hearing screening test on a student attending a junior secondary school on Vancouver Island.

tion is being maintained, particularly for the major diseases of smallpox, diphtheria, tetanus, and poliomyelitis.

This year a special report gives the percentage of Grade V girls who are protected against rubella (*see* Table XIV). The immunization of pre-pubertal girls is of particular concern because of the need to prevent rubella in women in their child-bearing years and the possible birth of infants with congenital defects. It is gratifying to note that 85.4 per cent of Grade V girls have had this protection and it is anticipated that the percentage will be even higher in future years as the programme becomes firmly established.

Table XV shows an increase in school enrolment of 6,577 for the Province. Enrolment decreased by 1928 in the Greater Vancouver area and by 202 in the Greater Victoria area. In the remainder of the Province there was an increase of 8,707. Although enrolment in public kindergartens increased, this was more than offset by the decrease of 1,073 in private kindergartens. The over-all enrolment in private schools continues to decrease in all areas of the Province.

During the year, public health nurses in areas served by the Health Branch provided 268,049 individual services to pupils in schools and auxiliary workers provided 53,614. Public health nurses held 5,466 formal conferences with classroom teachers to review the health status of children and in addition held 64,203 unscheduled conferences with teachers. They also made 40,978 visits to homes on behalf of school-children (*see* Table VIII).

In order to make good use of the nurse's time in the school, routine activities are under constant scrutiny. Those which can be performed by an auxiliary worker are delegated to her (*see* Table XI), and those which are not productive are replaced by other services. Rather than making routine inspections of large numbers of healthy children, the nurse places emphasis on children who have special needs. The teacher is a valuable ally in selecting these children. In the past school-year, 16.4 per cent of school-children were selected for the special attention of the public health nurse and 7.4 per cent were referred by her for further care (*see* Table XVI).

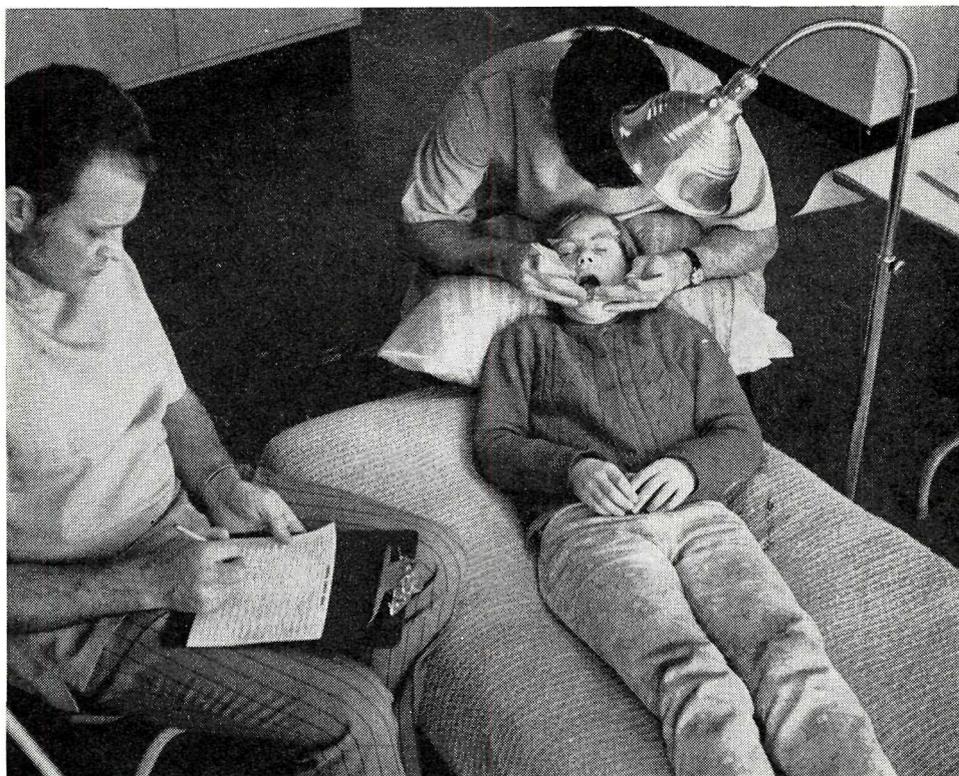
PREVENTIVE DENTISTRY

The goal of the Division of Preventive Dentistry is a state of optimum oral health for the people of British Columbia of all ages, irrespective of racial origin or socio-economic status. Ideal oral health is the complete absence of disease and dento-facial deformities of the oral cavity. At this time there is as yet no proven panacea for the total prevention of oral disease, whether this is dental caries or periodontal (gum) disease, and still less for the prevention of gross handicapping maxillo-facial malformations. Nevertheless, a very great deal of prevention leading to the minimization of these disorders can today be effected. Successful prevention very significantly reduces the needs for and costs of dental treatment. Such results have been demonstrated through programmes initiated by this Division of Preventive Dentistry and with the co-operation of the dental profession of British Columbia.

As an indicator, each year in this Province a dental health survey is carried out in at least one of seven regions. Such surveys commenced in 1956 and each survey comprises results for a statistically chosen random sample of the school-children of

the region. Two series of Province-wide surveys were completed during the periods 1958-60 and 1961-67. A third series commenced in 1968 and will be completed in 1974. Between the first and second series of surveys an improvement of the dental health status of the children was demonstrated. Similarly, in regions where a third survey has been completed, further improvements have been noted. Early in 1972 such a survey was carried out in the schools of the Fraser Valley. Comparing results of this survey with those of surveys in 1959 and 1965, various improvements in the dental health of the children of this region are observed, and especially in a lower dental caries attack rate of the deciduous (baby) teeth. Nevertheless, it is of very considerable concern that for all school-aged children (7-15 years) no less than 22 per cent had received no treatment for dental caries other than extractions. This survey also showed that in this region 15-year-old children, on the average, had 11 of their 28 permanent teeth already attacked by dental decay, and while six of these teeth had been satisfactorily restored (filled), four teeth were untreated and one permanent tooth had already been extracted or would likely be extracted in the near future. Furthermore, among these 15-year-olds, 32 per cent showed evidence of periodontal (gum) disease and 38 per cent had a handicapping malocclusion (severely crooked teeth). Very obviously a great deal more needs to be done and can be done by the communities and by the families to reduce the need and thereby the costs for treatment of dental caries, periodontal disease, and malocclusion.

In Greater Vancouver, dental health programmes are sponsored by the City of Vancouver, the North Shore Union Board of Health, and School District No. 41



A public school child is shown undergoing a dental examination as part of the Province-wide surveys which are carried out each year to assess the level of dental health of children throughout the Province.

(Burnaby). School District No. 61 provides preventive dental services to the pupils of Greater Victoria. During 1972 these services were extended to School Districts No. 62 (Sooke), No. 63 (Saanich), and No. 64 (Gulf Islands). The Government of British Columbia provides grants-in-aid to the annual operating costs of these services in both the Greater Vancouver and Greater Victoria metropolitan areas.

In the remainder of the Province, as part of the total public health services provided by the 17 health units of the Health Branch, five Regional Dental Consultants are employed. These dentists, each with graduate training in community health practices, organize and supervise the dental health programmes operating in these rural areas.

A basic programme in 45 school districts in these areas, in which one or more resident dentists are located, encourages families to have their 3-year-old children attend their family dentist. These children receive from their health unit an attractive birthday card. An insert informs the parents that the card should be presented to their dentist of choice while the child is 3 years of age. The child receives a dental examination, X-rays if considered necessary, and counselling in respect to oral hygiene and dietary practices. In addition, usually their teeth are painted with a decay-preventing fluoride solution, all at no direct cost to the parent. During the period September 1971 to August 1972, approximately 9,000 3-year-olds so benefited. A study reported in 1969 showed that, when at the Grade I level, *those children who had attended their dentist as 3-year-olds had 50 per cent fewer premature extractions and 50 per cent more were caries free* compared with children who had not visited their dentist at that age. Of considerable interest is the percentage of all 3-year-olds in each community who participated in this programme. Before such programmes were initiated, in 1964, it was estimated that only 20 per cent of 3-year-olds visited a dentist. In 1972, in Vernon, over 90 per cent of 3-year-olds who received their birthday card from their health unit visited a dentist. However, such a high level of participation is only achieved when dental health auxiliary staff are available to telephone parents whose children's cards are not returned via the dentists to the health unit, and to encourage these parents to avail themselves of this service.

The use of dental health auxiliary personnel was first pioneered in 1964 in the Okanagan region with the employment of a dental hygienist. Since then, that region and others have demonstrated how additional auxiliaries such as dental hygienists, dental assistants (latterly certified dental assistants), and also registered nurses and clerks with in-service training can all add their contributions to an effective dental health educational programme. By December 1972 there were so employed, in the rural health units, five dental hygienists, nine dental assistants (six of whom were certified), three dental health educators, and two dental health aides. However, of these 19 persons, only nine were employed full-time. Nevertheless, with these numbers and with the anticipated future expansion of dental health auxiliary programmes, there was appointed a Consultant, Dental Hygiene, to serve the Division on a Province-wide basis. This appointee was a dental hygienist who has served as Dental Hygiene Supervisor to the Okanagan region for the past six years. However, it is to be recorded that until this time all the above personnel have been employed on a local basis by their respective Union Boards of Health, with funds being provided by the Health Branch from the appropriation entitled "Preventive Dental Programmes."

During the past year an innovation of note was the additional employment of dental auxiliary personnel through the local initiative programme of the Government of Canada. Thereby, increased dental health educational activities were initiated in Alberni, Kamloops, and Salmon Arm. With the additional assistance of the teams

recruited in the latter two centres, it was possible to provide dental health education in every elementary school in the three health units of the Okanagan region. Never before has such coverage been achieved. These two teams provided dental health instruction to close to 26,000 school-children.

The Okanagan Dental Health Centre continues to provide preventive services which, it is believed, are not replicated in such a setting elsewhere in North America. Firstly, a "plaque control" programme is offered, primarily for the prevention of periodontal disease—the major cause of tooth loss in adult life. Over 100 persons have benefited from such counselling and personalized instruction. An abnormal manner of swallowing is a most insignificant cause of a serious form of malocclusion. Seventy-four children have received specific lessons in corrective muscle therapy to counteract this condition. In only two cases have the patients failed to respond to this preventive treatment. For families not in receipt of fluoridated water, supplemental fluorides are available at cost from the Kelowna Dental Health Centre, with a telephone follow-up to encourage continuance of this rather tiresome regimen. At present close to 800 children benefit from this service, with some 80 per cent of families continuing on a regular basis.

Commendable as this practice may be, it falls far short in community benefits compared with enrichment of the community's water supply to the optimum fluoride content. A dramatically lower level of dental decay is clearly evident in the two largest communities in this Province which have had fluoridated water for the longest periods—Prince George since 1955 and Kelowna since 1956. Nevertheless, only 11 per cent of the population of British Columbia, for wherever fluoridation is engineeringly possible, so benefit. This is the lowest percentage of any province in Canada. Eight of the twelve Canadian provinces and territories have in excess of 50 per cent of their populations, who could so benefit, in receipt of fluoridated water.

Since 1953, the Division of Preventive Dentistry has arranged for dentists to visit on as regular a basis as possible those communities which have been and are without a resident dentist or not regularly visited by a dentist. For several years past, including 1971 and 1972, five dentists (dental public health externs) have been especially recruited each year for this purpose, commencing their 12-month tour of duty early each summer. They are provided on a free loan by the Health Branch with a set of easily transportable and highly sophisticated dental equipment. Some 40 communities now receive this service each year. It is extremely doubtful if any of these communities are yet of a sufficient size to support a resident dentist on a full-time basis throughout the year. Experience has shown during the past few years that when a community reaches such a size, without fiscal incentive by any level of government, a dentist, of his own initiative, establishes a practice in such community. Furthermore, during the same period of time, there has developed an increasing trend for dentists practising in larger centres, for fiscal reasons, for a change of scene and pace, or for reasons of social conscience to adopt more and more of the underserved communities, establishing satellite practices, and there visiting on a regular schedule, e.g., two days a week, one week a month, etc. The dental public health extern programme each year visits all other communities in need of such a service. But with a few exceptions, all requests for this service are currently being provided. In the Okanagan region, such is the climate and topography that a dental clinic trailer is used for this purpose to optimum advantage.

During the past five years the ratio of population to dentists in British Columbia has improved significantly. The ratio in 1967 was 2,387 persons per dentist, while in 1972 each dentist was available to an average of 2,027 persons. Furthermore, although there remains a considerable disparity between the availability of dentists

in the metropolitan areas compared with the rural areas, especially the northern region, this situation has also improved. In 1966 the ratio of dentists to population in the northern regions of this Province was 1:4,757. This ratio in 1972 was 1:3,697, which over a five-year period was a most significant improvement. Increased availability of dentists has occurred to a marked degree in all regions of British Columbia during this period.

In addition to the increased number of dentists, the availability of dental services is being steadily increased by the number of dental hygienists and certified dental assistants, both of whom provide dental services previously only provided by dentists. At the close of 1972 there were 178 dental hygienists and 317 certified dental assistants licensed to practise in British Columbia. In 1965 there were only 15 dental hygienists practising in this Province and it was not until 1971 that the first certified dental assistants were trained and licensed. The University of British Columbia graduates some 20 dental hygienists each year and certified dental assistants are currently being trained in three vocational schools, with plans being completed for such courses to be made available in two further schools.

This division continues to sponsor scientific clinical field trials for the improvement of techniques for the prevention of oral diseases and abnormalities. Currently progressing are two large-scale studies, each including some 1,300 children who started in the studies when in the fourth and fifth grades. One study is being carried out in the Surrey School District and the other in five northern communities and in neither instance are the respective local water supplies fluoridated. Each study is testing a mouth rinse, used once each school-day, which was shown to be highly effective in preventing dental decay in earlier laboratory and animal studies. The active ingredient of one rinse is stannous fluoride, and the second has an acidulated fluoride phosphate base. Initiated in the fall of 1972 in the Okanagan was a third study in which a similar number of students are involved and which will test the effectiveness of a special fluoride paste brushed on by the students, followed by a fluoride rinse. While this technique will be carried out only twice each school-year, it is hoped it will demonstrate a level of decay prevention equal or superior to the results of earlier and rather similar Scandinavian trials.

NUTRITION SERVICE

During the year, every attempt was made to concentrate services on the nutritionally vulnerable groups (pregnant, infant, pre-school, adolescent, aged) and to stimulate an interest in nutrition in the community through the media.

As senior citizens are confronted with a multitude of problems regarding food, nutrition, and eating, a major project was undertaken to reach the elderly with nutrition information. A television series consisting of eight 10-minute shows, entitled the "Senior Chef," was broadcast over a commercial television station from January to April. Greater Victoria, Vancouver Island, and the Lower Mainland were included in the viewing area. In each show, the Chef (page 41) demonstrated two quick nutritious recipes, gave hints on food-buying, and, using the four food groups, suggested menu plans. Equipment used was unsophisticated and low-cost foods were emphasized. During the 15 weeks in which the show was broadcast,

1,515 requests were received for the booklet which contained all the recipes used in the show. Many viewers requested additional nutrition information, which emphasized the need for follow-up services in nutrition for the elderly. The series itself, evaluated by both senior citizens and professionals working in the community, was considered to be a success. The series was rebroadcast out of Kamloops covering the South Central, North Okanagan, and Cariboo regions in October and November.

A second television series was undertaken in co-operation with a Victoria cable-tv station and other Health Branch divisions from August to November. The series of 12 half-hour shows, entitled "Health in British Columbia," included six shows on nutrition. Experts working in British Columbia were invited to participate in discussion with the nutrition consultant in the following topics: Nutrition for Pre-schoolers, Food-buying, Weight Control, Food Costs and Food Values, Food for Senior Citizens, and Health Foods. The series provided general nutrition information to the community. Unfortunately, it was not possible to provide counselling service to those requesting further information. The video tapes were retained for use throughout the Province.

The nutrition consultant also participated in three consumer forums in Kamloops, Williams Lake, and Canim Lake. The forum, organized by the local health units and the area community college, were open to the general public and representatives of consumer groups. Each one-day forum consisted of lectures, discussion groups, and panels centred on the theme "We Care About Consumers and the Food They Eat." Questions and attendance indicated the forums were well received and nutrition was of interest in these communities.

As the majority of complaints received on community care licensing facilities concern food and nutrition, a dietitian was employed part-time for eight months of the year to examine existing regulations regarding nutrition and food service in community care facilities and to make recommendations regarding these regulations. During this time a manual for the operation of these facilities emphasizing nutrition for pre-schoolers and the aged was prepared. The public health staff members will require an intensive in-service education programme to assist them in the interpretation of the new regulations and proper utilization of the accompanying manual.

British Columbians participated in phase two of the national nutrition survey (Nutrition Canada) from January 10 to April 7. The investigating team examined over 18,000 residents from 42 areas of the Province. Included in the survey were native Indians on reserves and a sampling of transient youth from the Vancouver area. A preliminary report of the results of the survey is expected in the spring of 1973 and should be invaluable in planning nutrition education programmes for the immediate future.

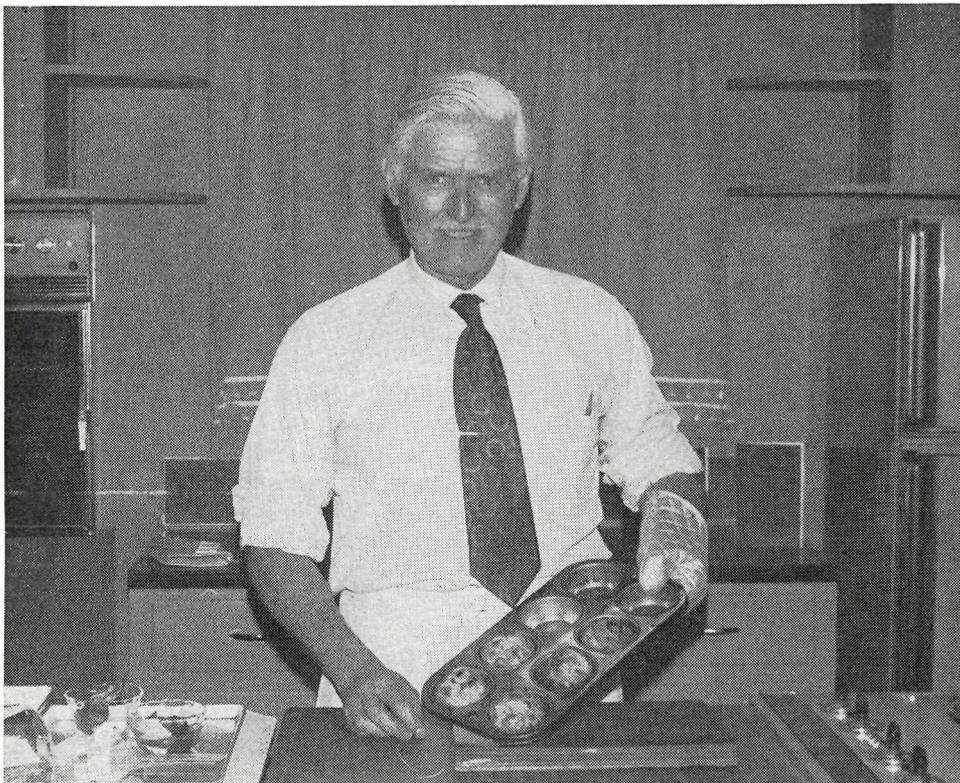
The in-service education component of the nutrition service was expanded to include

- introduction of a new daily food guide to professionals working in nutrition education;
- presentation of a lecture, "Nutrition in Pregnancy," at the public health nurses' regional conference in Kamloops;
- discussion of "Food Handling From the Nutritionists' Point of View" at the public health inspectors' meeting at Riverview;
- participation in a home economics teachers' workshop in the Victoria area;
- participation in a seminar at the North West Adult Education Conference (Vancouver) on educational programmes in foods and nutrition which could be undertaken by adult education departments;

- field work in community nutrition for dietetic interns from Victoria area hospitals;
- discussion group with home economic students at the University of British Columbia on careers in community nutrition;
- participation in the University of Victoria continuing education programmes for nurses.

Consultative services to community-oriented professionals, although limited, did include

- 24 health unit visits to 15 of the health unit offices in the Provincial and metropolitan health service (visits to health unit suboffices have been excluded from the Consultant's schedule);
- provision of resource information regarding nutrition education materials and methods to the Director of Home Economics, Department of Education, for use in home economics secondary school curriculum throughout the Province;
- participation with health unit personnel in open-line radio shows, community panels, television programmes, and newscasts on the subject of nutrition, food, and food costs throughout the Province;



The "Senior Chef," a programme produced on a Victoria Television station was directed toward older people in the community and people living alone. Simple ways to make meals were demonstrated and an explanation given by the Senior Chef on the way in which these meals should be balanced for adequate nutritional intake. Eight programmes were produced by the joint efforts of the Division of Public Health Education and the Provincial Nutritionist.

- assistance to Camosun College (Victoria) in establishing an evening course in nutrition;
- advice to dental assistants in Nanaimo on establishing a nutrition education programme at the second-grade level;
- production, in co-operation with the Division of Public Health Education, of the following publications and visual aids: *Daily Food Guide*, *Directory of Community Nutrition Services*, Nutrition Quiz photographic slide series plus verbal script, *Nutrition Tips and Ideas*, and the "Senior Chef" recipe booklet.

PUBLIC HEALTH EDUCATION

As one of the most important concerns in the delivery of health care to people and communities is education in public health, all members of Health Branch staff throughout the Province of British Columbia are concerned with informing the public on public health matters and guiding them toward better health.

On the staff of the Health Branch are nurses, doctors, public health inspectors, speech therapists, dentists, occupational therapists, physiotherapists, rehabilitation officers, clerical staff, and health educators, all of whom spend a great deal of time on this most important function. All staff members, therefore, require to have an understanding of human behaviour, human learning processes, and educational methods, and it is the first duty of the Division of Public Health Education to give assistance to staff in these matters.

The Division of Public Health Education also gives assistance to health education matters, on request, to other Government departments and to voluntary health agencies. An active liaison with voluntary agencies permits the free flow of ideas on the procedures to be employed in the preparation and circulation of educational material in the Province.

During 1972 the staff of the Division of Public Health Education consisted of three consultants and two clerks, who spent most of their time in advising other divisions of the Health Branch on the assessment of health education methods and materials. This includes previewing and evaluating films, film strips, publications, and posters, and the selection of appropriate educational methods and techniques. The Division also provides a technical service for the production of printed and audio-visual material and maintains a library service. The activities during 1972 include

- lectures to the Public Health Diploma Nursing Course at the University of British Columbia;
- lectures to the Dental Hygiene class at the University of British Columbia;
- work on a multimedia presentation with the staff of the Division of Venereal Disease Control for the "Infinity Fair" display in Vancouver;
- organizing and conducting a workshop for Powell River teachers on Family Life Education;
- organizing and conducting a workshop for teachers in the Peace River district on the Human Life Sciences curriculum;
- assisting Health Unit staffs at Prince Rupert, Cranbrook, Kamloops, Kelowna, Williams Lake, Victoria, Prince George, Langley, Surrey, Courtenay, and Coquitlam in the preparation of Health Education materials to

support their ongoing health care delivery programmes. In some cases practical technical help was given, e.g., photographic slide preparation, sound-tape dubbing, and instructions on the care and operation of audio-visual equipment.

Experimental work in the use of video-tape recording equipment was carried out at the South Central Health Unit, Kamloops, and an instructional tape on inspection of food-preparation equipment in a large institution was produced. The experiments were successful and will undoubtedly lead the way to further productions for in-service training of staff, not only in the public health inspection service but in all divisions of the Health Branch.

Methods of placing information concerning health before the public require careful assessment in order to meet development of specific media. For example, television, which is regarded as the most powerful information-spreading vehicle today, is being made more available for public education. The Division has taken steps to keep pace with this trend and, notably, the Division of Public Health Inspection, the Community Care Facilities Licensing Section, and the Nutrition Consultant have been in close communication, resulting in several specific projects being completed.

Details of these are as follows:

- The "Senior Chef" series: This programme consisted of eight live television shows directed, for the most part, to older people who, by reason of a failing interest in meal preparation and the accessibility of canned foods, tend to pay little or no attention to the body's nutritional requirements. A postproduction survey indicated that the project was successful. In consequence, the shows, which were video-taped, were shown in various Provincial centres. Kamloops district saw the series in September and October, and Prince George, Cranbrook, and Prince Rupert Health Branch staff have indicated interest in showing the series in their areas.
- The use of localized cablevision facilities offers tremendous potential in the field of public information and, in Victoria, 12 half-hour programmes were arranged with programme time being allocated as follows:

Nutrition.....	6 half-hour presentations.
Public Health Inspection Service.....	3 half-hour presentations.
Community Care Licensing Facilities.....	3 half-hour presentations.

Health Branch staff are continually reviewing the educational objectives criteria and standards of their programmes so that health, both personal and community, can become a real and motivating factor in the lives of the people of British Columbia.

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*; and to provide centralized statistical services to the Health Branch and to other Government departments and voluntary health agencies. Services are provided to the public through the main office in Victoria, a branch office in Vancouver, and 103 district offices and suboffices throughout the Province.

Table XVII indicates the volume of documents processed under the above-mentioned Acts in 1971 and 1972.

Items of importance in the work of the Division during 1972 were:

The total volume of registrations accepted continued to increase, despite a slight decline in the number of birth registrations.

The number of registrations of wills notices under the *Wills Act*, which has risen steadily in recent years, revealed a further substantial increase in the utilization of this service.

The *Change of Name Act* was amended in March this year to broaden its application and to remove certain existing limitations in connection with changes of name respecting children. The amendment also provides for birth and marriage certificates to be issued in the name adopted under the *Change of Name Act*, without revealing the person's original name.

The Registry for Handicapped Children and Adults continued to receive about 250 registrations monthly in addition to about 200 reports of congenital anomalies, which are important for medical research and surveillance, though not all of these are registrable as handicapping conditions. The follow-up programme relating to children who reached the ages of 7 and 14 years respectively in the current year continued to receive good co-operation from health unit directors and attracted wide interest outside the Province.

The Registry has proven its usefulness in a number of ways over the years it has been in existence. It has provided a central index of handicapped persons in the Province which facilitated surveys of special groups such as older deaf children and children requiring special dental care. It has aided early ascertainment of cases, leading to prompter treatment and rehabilitation. As well, it has provided an extremely useful source of morbidity statistics on the handicapping conditions included on the Registry.

The staff of the Registry co-operated in the production of two papers based on Registry statistics, which were published during the year (*see* list of publications, page 55).

The Cancer Register, which has been under development during the past few years, reached a further stage during the year with the completion of records and punch cards respecting all known live cases. This Register is being set up along the lines of the well-established Registry for the Handicapped, with due allowance for the difference in the nature of the conditions being reported.

The Division collaborated with the Central Cytology Laboratory of the British Columbia Cancer Institute in collecting and processing data for the cytology screening programme for cervical cancer. Data on more than 375,000 screening tests were transferred to punch cards during 1972, and the results of the 1971 screenings were analysed.

Assistance was given to the Medical Services Division of the Department of National Health and Welfare in carrying out a dental survey of native Indian children, which was conducted on the same lines as the annual school dental surveys. This is the first such survey carried out for these children and it should provide valuable base-line data. The Division also assisted in planning the 1972 dental health survey in the Fraser Valley region. The report of the Director of the Division of Preventive Dentistry provides information on the findings of the survey.

First-year results from the two studies on the caries-inhibiting effect of fluoridated mouth wash in two areas of the Province, which are referred to in the report of the Director of Preventive Dentistry, were being processed and summary data prepared.

The Division's Research Section participated in the preparation of a paper on the results of the Trail chewing-gum study, which was published in the *Journal of the Canadian Dental Association* (*see* list of publications, page 55). The results of the study indicated that after two years of chewing there were no statistically significant differences in mean caries increments for all teeth among the three experimental groups.

The Research Section continued to give 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 records of the operations of the Division of Venereal Disease Control were processed, and monthly and annual statistical reports were compiled.

The Division's Research Section maintained detailed statistics on natality and infant mortality in the Province. Analytical tables relating to births in 1965-70 were prepared from the records of the Physician's Notice of Birth, and were circulated to public health staff and selected medical specialists.

A report on infant mortality in the Province covering the period 1965-69 was published during the year in the Division's Special Report series.

A report on the level of pregnancy loss among British Columbia mothers in 1965-69, based on information given in the Physician's Notice of Birth, was prepared and accepted for publication by a professional journal. This report is designed to indicate the rate of abortions and stillbirths in the period preceding the liberalization of abortion which followed the amendment of the Criminal Code in 1969.



This picture shows the Tabulation Section of the Division of Vital Statistics, a section which produces statistical information for many health agencies in the Province.

The Division maintained punch-card files of all known cases of tuberculosis, admission and separation records of tuberculosis institutions, out-patient records, and results of tuberculin testing surveys.

The Division co-operated in the Department of National Health and Welfare's continuing programme for surveillance of congenital anomalies, and submitted weekly lists of anomalies gleaned from various sources. These are summarized by the Federal Department and comparative figures are returned to the provinces for their information. The data provide a valuable means of monitoring the occurrences of various types of anomalies.

Following the transfer to the Health Branch of responsibility for the licensing and controlling of community care facilities in 1971, the Division assumed responsibility for mechanical processing of the records of their operations.

The Division collaborated in the preparation of a paper on the results of a pre-school health-screening project in the Central Vancouver Island Health Unit, which was published in the *Canadian Journal of Public Health*. (See list of publications, page 55.)

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.

IN-PATIENT CARE

The In-patient Care Programme at Pearson Hospital and the Willow Chest Centre provides for tuberculosis patients and for persons requiring continuing care for other conditions listed later in this section. (The out-patient programme for those with tuberculosis has been described in this volume.)

At the present time, three wards in Pearson Hospital are providing care to 130 patients with tuberculosis. Normally two wards are used at Pearson Hospital and the increase is a temporary measure while renovations are being carried out at the Willow Chest Centre. The latter is providing care in two wards for 21 patients at present. The increase of patients with tuberculosis at Pearson Hospital has increased the work load of some departments in the hospital, especially the X-ray and laboratory services. There has been a concurrent increase in the number of patients attending the hospital's dental, ophthalmology, and otorbinolaryngology clinics, accentuated by the need to transport Willow Chest Centre patients to Pearson for these consultation services. When the Willow Chest Centre renovations are completed, advantage can be taken of these specialty treatments at the Vancouver General Hospital.

As well as the care for tuberculosis patients at Pearson Hospital, which has already been described, a number of beds are set aside for the extended care of patients with other respiratory conditions, and for those with multiple sclerosis, muscular dystrophy, the residual effects of poliomyelitis, and other such conditions. This is another aspect of the In-patient Care Programme.

Several senior staff changes have occurred due to retirement, resignations to seek other employment, or reorganization of departments. The two services of Occupational Therapy and Physiotherapy were combined to form a new Department of Activation Services. The director of this department was formerly the senior

physiotherapist. A recreational therapist position was established in the Activation Services and this has resulted in co-ordination of the many and varied recreational activities for both Pearson Hospital and Willow Chest Centre patients and also increased emphasis toward the diversional programme for patients with tuberculosis. A number of resignations of members of the Physiotherapy and Occupational Therapy staff occurred, but recruitment of new staff has been encouraging.

The Department of Nursing at Pearson Hospital and that at Willow Chest Centre are now combined into one department. The new director was previously in charge at the Willow Chest Centre. Replacement of senior nursing personnel who have retired was somewhat improved over the previous year, although recruitment difficulties continue. Central Supply Services for both institutions were part of their respective nursing services and have now been integrated at Pearson, the unit there requiring minimal increase of personnel.

The amalgamation of other in-patient services of Willow Chest Centre with those of Pearson Hospital continues. The centralization of stores at Pearson Hospital has now been completed. Both Dietary Services are now combined under the supervision of the hospital's Chief Dietitian. The Social Service Department has continued to be active in its efforts to rehabilitate patients in Willow Chest Centre and Pearson Hospital. A new programme was started at the latter institution to encourage severely disabled patients to accept increased responsibility in meeting some of their physical limitations. There has been evidence of some benefit to those who are participating.

Considerable constructional work has been done, involving new roofing of one ward and of the administration building. Interior painting of six of the seven wards has been completed, with that of the last under way at the year's end. The services of a colour consultant from the Department of Public Works resulted in a new, cheerful appearance to the wards, appreciated by patients, staff, and visitors. Replacement of the ceiling and painting of the main kitchen are in progress. The flooring of the patients' rooms in the extended-care wards was replaced.

The laboratory at Pearson Hospital has obtained new microscopes, and these improved models are of great assistance to the staff in processing the increased number of sputum examinations resulting from there now being in operation a third ward for patients with tuberculosis. More accurate enzyme tests for the follow-up treatment of these patients with the newer antimicrobial drugs is now possible because of the acquisition of additional equipment.

In-service education courses are being assessed for their effectiveness and being altered as required. The use of health education films for patients with tuberculosis has been initiated. Participation in certain areas of health education in the community has been requested by some outside agencies. The topics include patient bed-care in the Homemakers programme and tuberculosis nursing for student nurses, in addition to already established practical experience for students from the School of Rehabilitation Medicine at the University of British Columbia and from the Vancouver Vocational Institute.

Other significant events included Pearson Hospital again being granted full accreditation by the Canadian Council on Hospital Accreditation. Thus the hospital has maintained its accredited status since it was first surveyed in 1954. The occasion of the 20th anniversary of the official opening of the hospital on May 14, 1952, was celebrated with a staff tea party which was well attended. The patients participated by having a special dinner. Present and former members of the staff who were employed when the hospital opened were invited as special guests.

The Women's Auxiliary has continued to serve the patients in many ways. The auxiliary's provision of a number of the amenities of life, including the services

of a hairdresser and a manicurist, are greatly appreciated by the patients. Television sets, special supplies for occupational therapy, parties for and visits to patients have been of inestimable benefit. Organizations such as the Multiple Sclerosis Society, the Tuberculous and Chest Disabled Veterans Section of the Royal Canadian Legion, the Canadian Paraplegic Association, and the Kinsmen Rehabilitation Foundation of British Columbia also contribute to the welfare and happiness of the patients.

AID TO HANDICAPPED

The Division for Aid to Handicapped can report another year during which several important gains were made through which more handicapped people in the Province were provided with services (*see* Table XVIII).

Late in 1971, arrangements were made to appoint a consultant for the Kootenay region. His office is located in the Health Centre in Nelson and he serves the East and West Kootenays. New Aid to Handicapped Committees have been formed in Castlegar and Creston and are providing services to a developing and increasing case load of disabled persons in the region. Because of this appointment, the Division is able to extend its services to greater numbers in the Greenwood-Grand Forks area and it is expected that an Aid to Handicapped Committee in that area will soon be developed. As a result of these developments, the case load in the region has increased substantially.

The Okanagan region is showing consistent case-load expansion since the appointment of a full-time replacement consultant in the area last year after a period of 18 months when consultant services were provided on a one-week-a-month basis from the Vancouver office.

The Vancouver office carries a case load of approximately 500, which is the largest of any office in the Province. This case load is a difficult one, requiring precise supervision by the professional and clerical staff, and consists to a great degree of a shifting population of handicapped persons. They are brought to Vancouver from all parts of the Province for special procedures or a wide spectrum of special services not obtainable elsewhere in the Province. These services include sophisticated medical and vocational assessment, special treatment services, psychological testing and vocational counselling, vocational education, training from the industrial rehabilitation workshop, and university training at the graduate level.

During the year a Vancouver Aid to Handicapped Committee has been developing a case load at twice the rate of the Victoria Committee. These two committees carry the responsibility for approximately 35 per cent of the Provincial case load.

During 1973 it is hoped that, with added clerical and professional staff, the work of the Vancouver Aid to Handicapped Committee can be decentralized and located more directly within the health and welfare service areas of the Greater Vancouver region.

The Division was able to increase its financial assistance to designated agencies. Financial assistance takes the form of money specifically allotted for qualified professional personnel and necessary supporting clerical staff. By making funds available for this purpose, the availability of well-qualified professionals to the handicapped of the Province has been considerably enhanced.

The Opportunity Rehabilitation Workshop has made excellent use of its salary assistance and now has one of the best vocational assessment units and vocational training programmes for the handicapped in Canada. Its capacity has expanded to the point where between 60 and 65 handicapped persons are in the assessment or training process at all times.

Goodwill Enterprises of Victoria have also functioned in a similar manner. The Western Institute for the Deaf has received assistance toward professional salaries and this has allowed it to make a contribution which otherwise would not have been possible.

A matter of need which should be a high priority in the development of services for the handicapped is that of planning for competent vocational assessment services which should be more widely available than they are. The Division has felt for some time that considerable effort should be directed toward the development of such services either within or in conjunction with the presently available vocational schools which are well equipped, competently staffed, and located in every region in the Province. Advantage should be taken of these circumstances and an effort made to add what is required in staff and equipment to make the assessment services available.

Accordingly, arrangements were made in the early part of the year with the Technical and Vocational Services Division of the Department of Education to start an experimental, joint project in conjunction with Camosun College and the British Columbia Vocational School, Victoria. The Division for Aid-to-Handicapped contributed the services of a competent rehabilitation evaluator and rehabilitation psychologist and the Technical and Vocational Services Division contributed adequate quarters and the expertise of the staff of the vocational school.

The Division has received valuable assistance from the staff of other Provincial Government departments, notably the Department of Education and the Department of Rehabilitation and Social Improvement, the regional and local offices of Canada Manpower, and the many voluntary agencies who have helped with the re-establishment of the disabled into a life with meaning and purpose.

LABORATORY SERVICES

PUBLIC HEALTH LABORATORY SERVICES

Despite the noise, dirt, and disorganization inevitably created by renovations to the four floors of the Provincial Health Building in Vancouver, the Provincial Laboratories continued to provide uninterrupted services in bacteriology, mycology, parasitology, and virology. In Table XIX the number of tests performed in 1972 in the Main Laboratory and the Branch Laboratories at Nelson and Victoria are compared with the corresponding figures for 1971. Work load increased from 498,000 tests in 1971 to 504,500 tests in 1972. There were increases in virus isolation, 40 per cent; smears and cultures for *Neisseria gonorrhææ*, 34 per cent; examination for intestinal parasites, 29 per cent; smears and cultures for miscellaneous bacteria, 19 per cent. Decreases noted were fungal examinations, 31 per cent; water bacteriology, 8 per cent; syphilis serology, 6 per cent; agglutination tests for febrile diseases, 5 per cent; enteric bacteriology, 4 per cent.

REFERENCE SERVICES

To meet the growing need for advice on exotic diseases, a Tropical and Parasitic Diseases Reference Service has been established at the Provincial Laboratory, Vancouver, B.C. An exotic disease is defined as one which is normally acquired outside the area in which the doctor works.

With the increasing speed and volume of world travel, more physicians are likely to be consulted by patients with or without symptoms who may have acquired exotic infections in the tropics. In taking the medical history of such patients, answers will determine the investigation essential to rapid differential diagnosis and appropriate early treatment. Lack of clinical awareness of such exotic diseases as malaria may lead to the tragedy of delayed or missed diagnosis and unnecessary death. The reference service has provided advice on these matters and has distributed selected drugs for their treatment.

The Botulism Reference Service for Canada, established in the laboratories by the Department of National Health and Welfare and the Provincial Department of Health Services and Hospital Insurance, continued to provide consultative and practical assistance on the diagnosis and treatment of botulism, although there have been very few cases reported.

The Service also participated in the investigation of six food-poisoning incidents caused by other agents.

VIROLOGY

In 1971 and 1972, outbreaks of Western equine encephalitis (WEE) were reported from the Okanagan Valley. For the first time in British Columbia, WEE infection of patients and of horses was proven by laboratory tests.

COMMUNICABLE DISEASE NEWS

At the request of the Editorial Board of the *British Columbia Medical Journal*, brief communicable disease news items were submitted for publication each month in the section devoted to public health and mental health news. This is a new activity for Laboratory staff and represents an important step forward in the dissemination of information on communicable disease.

The Director and the Virologist made updating visits to discuss current development in microbiology with consultants in Canada and the United States.

CLINICAL LABORATORY SERVICES

The work load in clinical laboratories in British Columbia hospitals continued to increase due to greater usage of diagnostic procedures and a variety of new tests. This situation created a change in pattern, particularly in the larger hospitals, and new equipment was required in order to utilize available space and staff. Requests for more sophisticated equipment were referred to the Laboratory Advisory Council through the office of the Consultant of Clinical Laboratories. This necessitated a great deal of research in order to give advice to British Columbia Hospital Insurance Service regarding grants.

The Laboratory Advisory Council has, for several years, advised the British Columbia Hospital Insurance Service before grants are awarded to hospitals for the purchase of diagnostic and laboratory equipment. The Council consists of representatives from the British Columbia Medical Association, the Health Branch, the Department of Pathology of the Faculty of Medicine at the University of British Columbia, and the British Columbia Hospital Insurance Service.

In British Columbia, clinical laboratory services have been regionalized and there are now eight in existence throughout the Province. These laboratories offer many diagnostic tests to in-patients and out-patients of hospitals. It is interesting to note that the organization now in existence in British Columbia has become a prototype for other Canadian provinces.

The additional equipment, totalling approximately half a million dollars, made it possible for the supply of technologists to meet the demands in most hospitals. The graduation of 80 technologists in British Columbia last year filled the staffing needs, except in some rural areas. The addition of training-schools in Nanaimo and Kelowna should assist the staff problems in the smaller hospitals in these areas.

The students received their initial training at the British Columbia Institute of Technology and, as the demand for technologists will increase, the Advisory Committee to the School of Medical Technology at the institute was asked to project the number of trainees required in 1975-80. A subcommittee was appointed to study this problem. A vast amount of data were accumulated and a detailed report was presented to the principal of the institute.

Postgraduate training was provided by the Fifteenth Annual Postgraduate Course in Kamloops and a course in haematology which was given one evening a week for 15 weeks. This was offered by the Extension Division of the British Columbia Institute of Technology in co-operation with the British Columbia Society of Medical Technologists, and 60 technologists attended. A similar course in microbiology is scheduled in January 1973.

British Columbia Hospital Insurance Service construction department continued to consult the Laboratory Advisory Council. Functional programmes, preliminary plans, and working drawings for expansion or new laboratory facilities were reviewed and recommendations made.

The plans for the new laboratory in the Dawson Creek hospital allowed space for expansion to provide regional pathology services. Two pathologists showed interest in setting up a programme in this area and commenced preliminary discussions with the British Columbia Hospital Insurance Service and the Laboratory Advisory Council. When this becomes a reality, the majority of hospital laboratories in the Province will be included in a regional pathology service.

EMERGENCY HEALTH SERVICE

The objective of the British Columbia Emergency Health Service is to develop a capability to provide mass-casualty care and emergency public health service to the people of the Province. The co-ordination of the service is carried out by a consultant who also functions as Pharmaceutical Consultant (*see* separate report, page 53).

The availability of students for summer employment allowed repacking and tagging of supplies and equipment for the training 200-bed Emergency Hospital, training Advanced Treatment Centre, and training Casualty Collections Unit. However, these ready-to-use units will have to remain in storage because of severe reductions in the Provincial Emergency Health Service Programme.

During the last fiscal year, negotiations were active with a number of hospitals for pre-positioning of medical supplies and equipment. It was considered this programme should be completed to the extent of available funds.

It is considered desirable for Provincial Emergency Health Service to have discussions with neighbouring States on the exchange of health manpower and other items of common interest for the protection of the populations.

The Province of British Columbia was subjected to floods and threats of floods this year. Along with other emergency services, Emergency Health Services were placed on a standby basis. Fortunately, the flooding did not result in emergencies requiring major action of Emergency Health Services.

Heavy rain on the Lower Mainland did result in an inundation of a storage area containing an Advanced Treatment Centre and a Casualty Collecting Unit. However, quick action by the Commanding Officer of the establishment in acquiring additional sump pumps limited damage to eight boxes of stretchers and blankets.

Basic industries in more remote areas are creating demands for back-up health supplies in a community emergency, and these requests are being followed up.

The majority of Emergency Health Services supplies in British Columbia are stored in community hospitals.

COMMUNITY EMERGENCY PLANNING

Community Emergency Health planning and exercises are an encouraging aspect of Emergency Health Services in British Columbia. More communities are noting the value of the exercises, and the number of yearly exercises has increased. This is due, in part, to accreditation requirements. In particular, the smaller communities, with primary industries, are very conscious of Emergency Health planning. Casualty simulation and training supplies provided through Provincial Emergency Health Services are an integral part of these exercises.

TRAINING

Another encouraging aspect is the reception by community hospitals of in-service programmes for hospital personnel, consisting of three films and two lectures. These were presented at nine hospitals this year.

Other activities included the following:

- As part of a Disaster Nursing Education Programme, students from the nursing schools at the Royal Jubilee Hospital and the Victoria General Hospital in Victoria continue to attend Emergency Health Services courses conducted by the Emergency Health Service at the Civil Defence Headquarters in Victoria.
- Provincial Emergency Health Service continues to support a jointly sponsored course entitled "Primary Care for the Emergency Patient." Consideration is being given to lengthening this course beyond two days.
- The British Columbia Hospitals' Association again provided excellent display space in the exhibitors' section at its annual meeting. The Federal Emergency Health Services was well received by hospital administrators and board chairmen.
- Because the supplies of the Training Advanced Treatment Centre and the Training Casualty Collecting Unit had been tagged prior to the Abbotsford Airshow, both units were made available on a standby basis. The airshow emphasizes the value of a periodic exercise. It is considered that the Fraser Valley was well prepared and able to cope with the flood situation.

PRE-POSITIONING

The following units and supplies were pro-positioned in 1972 (see Table XX).

Emergency hospitals	3
Advanced Treatment Centres	2
Casualty Collecting Units	2

There are now 194 units in 111 storage locations in 75 municipalities.

PHARMACEUTICAL CONSULTANT SERVICE

The Consultant in Pharmacy provides advice to the Minister and Deputy Minister and, upon request, to other departments of Government. The Consultant continued as chairman of the Minister's Drug Advisory Committee during 1972. The committee was commissioned by the Minister of Health Services and Hospital Insurance, and is composed of representatives of the British Columbia Medical Association, British Columbia Pharmaceutical Association, and faculties of medical and pharmaceutical sciences of the University of British Columbia.

Subcommittees enabled the Drug Advisory Committee to complete most of its terms of reference, which included investigation of drug prices, product selection, labelling of products, advertising of brand-name products and generic equivalents, and the pharmacists' fees for dispensing prescriptions. Last year the Committee was requested to make recommendations concerning action that might be taken to reduce the cost of drugs to the elderly, the poor, and to provide assistance to those who experience an unequal and generally unpredictable incidence of heavy drug costs.

COUNCIL OF PRACTICAL NURSES

The Council of Practical Nurses has, as its main responsibility, the assessment of applications from persons who wish to be licensed as practical nurses and the issuing of licences to those who are qualified. The legislative authority lies in the *Practical Nurses Act* and the regulations under this Act.

The Council consists of 10 members appointed by order of the Lieutenant-Governor in Council on the basis of nominations submitted by

- (a) the Minister of Health Services and Hospital Insurance (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).

The first licences were issued in 1965. Since then, the Council has received over 8,000 applications. Table XXI shows the disposition of these.

During 1972 the Council as a whole held seven meetings, each about five hours in length. This brought to 53 the number held during the period, 1965-72.

There were also numerous meetings of several committees appointed by the Chairman with the approval of the Council. One of these, the Committee on Credentials, serves on a continuing basis. It assesses the qualifications of applicants and submits to the Council recommendations concerning their acceptability. Another committee was appointed to study the regulations and make recommendations concerning possible changes.

Until 1972, the *Practical Nurses Act* made the Council responsible for approving the establishment, maintenance, and conduct of schools or training courses for practical nurses. At the 1972 Session of the Legislature, the Act was amended to relieve the Council of this responsibility in respect of those schools or training courses which are operated under the authority of the *Public Schools Act*. This makes it unnecessary for the official educational authorities of British Columbia to seek approval of the Council in matters relating to schools and training courses. At the same time, the Act retains the safeguard whereby any other person or organization wishing to operate a school or training course for practical nurses must have the approval of the Council.

PUBLICATIONS, 1972

- Twenty Years Experience With a Handicapped Child Registry*, Proceedings of the International Congress of Pediatrics, August 29 to September 4, 1971, pp. 151-156, by R. B. Lowry, J. R. Miller, A. E. Scott, and D. H. G. Renwick.
- Incidence and Genetics of Legg-Perthes Disease in British Columbia*, Journal of Medical Genetics, Vol. 9, 2:197-202, June 1972, by Irene M. Gray, R. B. Lowry, and D. H. G. Renwick.
- Incidence of Phenylketonuria in British Columbia, 1950 to 1971*, Canadian Medical Association Journal, 106:1299-1302, June 24, 1972, by R. S. Lowry, B. Tischler, W. H. Cockcroft, and D. H. G. Renwick.
- Hospital Separations and Cancer Registrations in British Columbia*, Canadian Journal of Public Health 63:363-365, July/August 1972, by R. W. Morgan and A. E. Scott.
- A Pre-school Screening Program, Central Vancouver Island Health Unit, 1970-71*, Canadian Journal of Public Health 63:268-271, May/June 1972, by Alistair Thores and John Phillion.
- Anticariogenic Effects of Dicalcium Phosphate Dihydrate Chewing Gum: Results After Two Years*, Journal of the Canadian Dental Association, 38:213-218, June 1972, by A. S. Richardson, L. W. Hole, F. McCombie, and J. Kolthammer.
- The Continuing Challenge of Salmonellosis*, Canadian Journal of Public Health, 62:473, November/December 1971, editorial by E. J. Bowmer.

- Pentastomiasis in Western Canada: A Case Report*, American Journal of Tropical Medicine and Hygiene, 21:58, January 1972, by Z. Ali-Kahn and E. J. Bowmer.
- Filariasis Imported Into British Columbia*, Canadian Journal of Public Health, 63:90, January/February 1972, by E. J. Bowmer.
- Canadian Botulism Reference Service*, Canadian Journal of Public Health, 63:76, January/February 1972, by E. J. Bowmer and D. A. Wilkinson.
- Typhoid at Sea: Epidemic Aboard an Ocean Liner*, Canadian Medical Association Journal, 106:877, April 22, 1972, by J. W. Davies, K. G. Cox, W. R. Simon, E. J. Bowmer, and A. Mallory.
- Index of Drinking Water Pollution—Total Coliform MPN Tests: Confirmed Test Versus Completed Test*, Canadian Journal of Public Health, 63:355, July/August 1972, by E. J. Bowmer and J. A. K. Campbell.
- Rapid Diagnostic Methods in Medical Microbiology*, ed. Charles D. Graber, Canadian Doctor, 38:118, April 1972, review by E. J. Bowmer.
- Study of Congenital Rubella in B.C.*, British Columbia Medical Journal, 14:19, January 1972, by G. D. M. Kettlys, J. Robert MacLean, and Sydney Segal.
- Arbovirus Infections in Man in British Columbia*, Canadian Medical Association Journal, 106:1175, June 1972, by G. D. M. Kettlys, V. M. Verrall, Mrs. Leslie D. Wilton, J. B. Clapp, D. A. Clarke, and J. D. Rublee.
- Trichinosis from Bear Meat and Adulterated Pork Products: A Major Outbreak in British Columbia, 1971*, Canadian Medical Association Journal, 107:1087, December 9, 1972, by N. Schmitt, E. J. Bowmer, P. C. Simon, A. S. Arneil, and D. A. Clark.

TABLES

Table I—Approximate Numbers of Health Branch Employees by Major Categories at the End of 1972

Physicians in local health services	18
Physicians in institutional and other employment	19
Nurses in local health services	322
Nurses in institutions	72
Public health inspectors	71
Dentists in local health services	5
Laboratory scientists	22
Laboratory technicians	26
Public health engineers	5
Statisticians	7
Others	778
Total	1,345

Table II—Organization and Staff of Health Branch (Location and Approximate Numbers of Persons Employed at End of 1972)

Health Branch headquarters, Legislative Buildings, Victoria	54	
Health Branch office, 828 West 10th Avenue, Vancouver	36	
		90
Division of Vital Statistics—		
Headquarters and Victoria office, Legislative Buildings, Victoria	70	
Vancouver office, 828 West 10th Avenue, Vancouver	19	
		89
Division of Tuberculosis Control—		
Headquarters, 2647 Willow Street, Vancouver	10	
Willow Chest Centre, 2647 Willow Street, Vancouver	134	
Pearson Hospital, 700 West 57th Avenue, Vancouver	326	
Victoria and Island Chest Clinic, 1902 Fort Street, Vic- toria	11	
New Westminster Chest Clinic, Sixth and Carnarvon, New Westminster	7	
Travelling clinics, 2647 Willow Street, Vancouver	17	
		505
Division of Laboratories—		
Headquarters and Vancouver Laboratory, 828 West 10th Avenue, Vancouver	80	
Nelson Branch Laboratory, Kootenay Lake General Hos- pital	1	
Victoria Branch Laboratory, Royal Jubilee Hospital ¹		
		81

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 1972)—Continued

Division of Venereal Disease Control—Headquarters and Vancouver Clinic, 828 West 10th Avenue, Vancouver	19
Division for Aid to Handicapped—	
Headquarters, 828 West 10th Avenue, Vancouver	10
Nanaimo	1
Vernon	1
Prince George	1
Surrey	1
Nelson	1
	— 15
Local Public Health Services (Health Units)—	
East Kootenay, Cranbrook	25
Selkirk, Nelson	13
West Kootenay, Trail	21
North Okanagan, Vernon	26
South Okanagan, Kelowna	39
South Central, Kamloops	31
Upper Fraser Valley, Chilliwack	29
Central Fraser Valley, Mission	28
Boundary, Cloverdale	54
Simon Fraser, Coquitlam	38
Coast-Garibaldi, Powell River	18
Saanich and South Vancouver Island, 780 Vernon Avenue, Victoria	45
Central Vancouver Island, Nanaimo	53
Upper Island, Courtenay	24
Cariboo, Williams Lake	18
Skeena, Prince Rupert	28
Peace River, Dawson Creek	19
Northern Interior, Prince George	37
	— 546
Total	1,345

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 72 full-time employees.

Table III—Comparison of Public Health Services Gross Expenditure for the Fiscal Years 1969/70 to 1971/72

	Gross Expenditure			Percentage of Gross Expenditure			Percentage Increase or Decrease (—) Over Previous Year
	1969/70	1970/71	1971/72	1969/70	1970/71	1971/72	
	\$	\$	\$				
Local health services.....	5,924,284	6,235,726	6,689,345	38.8	40.9	40.5	7.3
Patient care.....	4,200,358	4,335,945	4,711,304	27.5	28.4	28.5	8.7
Cancer, arthritis, rehabilitation, research.....	2,637,205	1,774,510	1,973,397	17.3	11.6	12.0	11.2
General administration and consultative services.....	899,100	1,205,622	1,460,097	5.9	7.9	8.8	21.1 ¹
Division of Laboratories.....	860,196	923,546	832,178	5.6	6.1	5.0	-9.9 ²
Division of Vital Statistics.....	560,231	599,684	647,938	3.7	3.9	3.9	8.0
Division of Venereal Disease Control.....	176,973	189,188	209,138	1.2	1.2	1.3	10.5
Totals.....	15,258,347	15,264,221	16,523,397	100.0	100.0	100.0	8.2

¹ Large increase due to a new vote, Development of Alternative Care Facilities.

² Decrease in Division of Laboratories due to the transfer of the pollution control programme to the Water Resources Branch.

Table IV—Training of Health Branch Staff Proceeding 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 1972—

Diploma in Public Health Nursing (University of Washington) ...	1
Diploma in Public Health Nursing Supervision (Dalhousie University)	1
Master's Degree in Speech Therapy (Western Washington State College)	1
Diploma in Public Health Nursing (University of British Columbia)	2
Total	5

Commenced training during 1972—

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 (Johns Hopkins University) ...	1
Master's Degree in Public Health (University of Michigan)	1
Diploma in Public Health Nursing (University of British Columbia)	2
Total	6

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

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

Workshop for Public Health Nurses (The Woodlands School for Retarded, Vancouver)	8
Dr. Robert Barkley Lecture (Queen Elizabeth Theatre, Vancouver) ..	1
Regional Workshops on Hearing Screening (Nanaimo, Pringe George, and Trail)	3
Food Control and Other Related Topics (Riverview Hospital Educational Centre)	48
Focus on Aging (Christmas Seal Auditorium, Vancouver)	5
Nursing Care of the Patient and Long Term Illness (B.C. Institute of Technology)	2
Drugs and Alcohol: Their Effect on Industry (Bayshore Inn, Vancouver)	3
An Introduction to the Psychology of Aging (Shaughnessy Hospital, Vancouver)	1
Fifteenth Annual Refresher Course (University of Toronto)	2
First Annual Regional Institute for Public Health Nurses (Kamloops)	90
Seventh Annual Neuropsychology Workshop (University of Victoria)	1
Public Health Refresher Course (University of Alberta)	1
Accidental Happenings in Childhood—Pædiatric Nursing (University of British Columbia)	2
Institute on Crisis Intervention (Vancouver General Hospital)	1
Developing Human Resources for Improved Nursing Care (University of Toronto)	2
Crisis Intervention Seminar (University of British Columbia)	1
Environmental Health Administration (Ryerson Polytechnical Institute, Toronto)	5
Seminar/Workshop on Electrical Safety in Hospitals (B.C. Institute of Technology)	1
B.C. Speech and Hearing Association Workshop (Western Institute for the Deaf, Vancouver)	1
Recycling—Reclamation of Municipal Solid Wastes (University of British Columbia)	1
Home Care and Management Seminar (Powell River)	1
Senior Health Branch Staff Training (University of British Columbia)	125
Supervisors Training Course in Accident Prevention (University of British Columbia)	1
Certificate Programme in Health Care Management (B.C. Institute of Technology)	1
Electron Microscopy Diagnostic Service (University of Toronto)	1
Conference of the Food Service Industry (Department of Health and Welfare, Ottawa)	1
Group Skills Development Workshops (Vancouver)	20
National Conference on School Health (Ottawa Inn, Ottawa)	1

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

Environmental Health Administration Correspondence Course (Ryerson Institute)	8
The 1972 American Speech and Hearing Association (San Francisco)	1
“Probe”—A Conference on Health and the Industrial Environment (Hotel Vancouver)	6
Third Annual Conference on Trichinellosis (Miami, Florida)	1
The Battered Child (University of Colorado)	1
Cross Connection Control (University of British Columbia)	5
Conference of Radiological Society of North America (Chicago, Illinois)	1
Institute on “New Approaches to Working With Volunteers” (Jewish Community Centre, Vancouver)	1
Multi Discipline Conference of B.C. Chapter of Canadian Guidance and Counselling Association (Vancouver City College)	1

Table VI—Reported Communicable Diseases in British Columbia, 1968–72
(Including Indians)

(Rate per 100,000 population)

	1968		1969		1970		1971		1972	
	Number of Cases	Rate								
Amoebiasis.....	4	0.2	12	0.6	5	0.2	1	0.1	1	0.1
Brucellosis.....	—	—	1	0.1	—	—	—	—	—	—
Diarrhoea of the newborn (<i>E. coli</i>).....	19	0.9	23	1.1	54	2.5	64	2.9	60	2.7
Diphtheria.....	8	0.4	14	0.7	9	0.4	11	0.5	11	0.5
Dysentery, type unspecified.....	165	8.2	209	10.1	143	6.7	126	5.7	72	3.2
Food infection—										
Salmonellosis.....	165	8.2	400	19.3	532	24.9	548	24.9	415	18.5
Unspecified.....	311	15.5	19	0.9	6	0.3	8	0.4	73	3.2
Food intoxication—										
Staphylococcal.....	9	0.4	29	1.4	8	0.4	6	0.3	16	0.7
Botulism.....	2	0.1	8	0.4	2	0.1	—	—	5	0.2
Hepatitis—										
Infectious.....	2,032	101.3	2,139	103.3	1,910	89.4	1,954	89.0	1,894	84.3
Serum.....	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	26	1.2
Leprosy.....	—	—	—	—	—	—	1	0.1	—	—
Meningitis—										
Bacterial.....	17	0.8	13	0.6	14	0.6	17	0.8	34	1.5
Viral.....	43	2.2	22	1.1	32	1.5	45	2.0	22	1.0
Pertussis.....	136	6.8	59	2.9	155	7.2	91	4.1	102	4.5
Q. fever.....	—	—	—	—	—	—	—	—	1	0.1
Rubella.....	(†)	(†)	(†)	(†)	(†)	(†)	1,168	53.2	84	3.7
Rubeola.....	(†)	(†)	(†)	(†)	(†)	(†)	200	9.1	97	4.3
Shigellosis.....	276	13.8	64	3.1	166	7.8	241	11.0	202	9.0
Streptococcal throat infection and scarlet fever.....	1,020	50.9	1,236	59.7	644	30.1	306	13.9	454	20.2
Tetanus.....	—	—	2	0.1	—	—	—	—	—	—
Typhoid and paratyphoid fever.....	5	0.2	5	0.2	5	0.3	5	0.2	13	0.6
Total.....	4,212	209.9	4,255	205.6	3,685	172.4	4,792	218.2	3,582	159.4

* Infectious and serum hepatitis combined.

† Not reportable.

Table VII—Reported Infectious Syphilis and Gonorrhœa, British Columbia, 1946, 1951, 1956, 1961, 1965–72

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
1965.....	165	9.2	6,005	335.7
1966.....	71	3.8	5,415	290.8
1967.....	72	3.7	4,706	241.7
1968.....	68	3.4	4,179	208.2
1969.....	45	2.2	4,780	231.2
1970.....	76	3.6	6,070	284.0
1971.....	73	3.3	7,116	324.0
1972.....	99	4.4 ²	7,924	352.6 ²

¹ Rate per 100,000 population. ² Preliminary.

Table VIII—Statistical Summary of Selected Activities of Public Health Nurses, September 1971 to August 1972, Inclusive¹

School service—

Directly by nurse	268,049
Directly by auxiliaries	53,614
Teacher/Nurse conferences	5,466
Home visits	40,978
Group sessions with pupils	5,096
Meetings with staff	1,910
Conferences with staff	64,203

Expectant parents—

Class attendance by mothers	20,992
Class attendance by fathers	2,504
Prenatal home visits	3,672
Postnatal visits	19,796

Child health—

Infants—

Conferences attendance	52,657
Home visits	34,260

Preschool—

Conferences attendance	85,411
Home visits	29,746

Home care—

Nursing care visits	88,921
Physiotherapist assessments	1,357
Physiotherapist home visits	1,466
Adult health supervision visits	47,543
Mental health visits	18,547

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 VIII—Statistical Summary of Selected Activities of Public Health Nurses, September 1971 to August 1972, Inclusive¹—Continued

Disease control—	
Tuberculosis visits	8,905
Venereal disease visits	4,840
Communicable disease visits	6,516
Immunizations—	
Smallpox	89,883
Poliomyelitis	144,205
Basic series of diphtheria, pertussis, and tetanus	20,446
Rubella	31,304
Measles (rubeola)	24,269
Other	155,927
	466,034
Total doses	
Tests—	
Tuberculin	16,101
Other	12,964
Total visits to home	184,161
Professional services by telephone	207,988

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, 1969–72,
for 17 Provincial Health Units

Item	1969	1970	1971	1972 (Estimate)
Food premises—				
Eating and drinking places.....	4,390	4,718	3,952	5,304
Food processing.....	765	751	698	(1)
Food stores.....	1,558	1,516	1,505	1,719
Other.....	410	408	448	802
Factories.....	748	714	561	416
Industrial camps.....	375	416	260	227
Hospitals.....	119	88	86	(2)
Community care.....	374	397	690	1,505 ³
Schools.....	956	723	753	220
Summer camps.....	179	179	186	275
Other institutions.....	197	251	336	(2)
Housing.....	1,721	1,856	1,437	1,963
Mobile-home parks.....	1,287	1,550	1,296	1,496
Camp-sites.....	779	837	745	2,311
Other housing.....	(4)	262	291	510
Hairdressing places.....	682	501	487	418
Farms.....	339	440	369	386
Parks and beaches.....	692	915	797	397
Swimming-pools—				
Inspection.....	1,505	1,232	1,115	1,297
Samples.....	1,122	1,207	907	1,121
Surveys (sanitary and other).....	876	768	767	537
Waste disposal.....	1,057	1,270	861	795
Public water supplies—				
Inspection.....	1,108	1,150	1,110	1,377
Sample.....	5,044	5,302	4,637	5,342
Private water supplies—				
Inspection.....	2,172	2,068	1,968	2,053
Sample.....	3,353	3,422	2,914	2,535
Pollution samples—				
Bacteriological.....	2,397	1,685	1,603	1,258
Chemical.....	1,251	864	303	
Field tests.....	682	406	520	
Private sewage disposal.....	11,130	11,808	13,614	15,956
Municipal outfalls and plants.....	888	836	552	470
Plumbing.....	211	211	214	414
Subdivisions.....	4,195	4,305	4,881	5,751
Site inspections.....	8,084	8,833	9,976	10,958
Nuisances—				
Sewage.....	3,886	3,707	3,927	3,921
Garbage and refuse.....	2,536	2,364	2,138	2,273
Other (pests, etc.).....	2,059	2,338	2,299	2,750
Disease investigation.....	310	308	310	300
Meetings.....	3,287	3,502	3,849	3,495
Educational activities.....	1,253	1,139	1,139	1,522

1 Included in "other food premises."

2 Included in "community care."

3 Includes boarding-homes, youth hostels, day care centres, hospitals, and other institutions.

4 Not available.

Table X—Summary of Services Provided by Speech and Hearing Services, 1972

Number of health units offering services to the speech and language handicapped population.....	7
Total number of speech and language assessments.....	746
Total number of therapy sessions.....	3,501
Total number of consultative/educational visits made by speech therapists.....	382
Total number of persons discharged from therapy.....	174

Table XI—Report of Direct Service by Auxiliary Workers to Public Health Nursing Programme, September 1971 to August 1972

Type of Worker	For Infants, Number of Services	For Pre-school Children			For School-children			Adult Services	
		Number of Tests for		Other Service	Number of Tests for		Other Service	Under 65 Years	65 Years and Over
		Vision	Hearing		Vision	Hearing			
Health unit aide..	32	4,064	3,868	195	32,865	6,443	351	190	261
Incentive trainee..	5	104	181	12	4,400	1,263	452	7	1
Volunteers.....	220	812	756	865	5,751	1,272	817	—	—
Totals.....	257	4,980	4,805	1,072	43,016	8,978	1,620	197	262

Table XII—Number of Pupils Receiving Basic Immunization Prior to Entering Grade I, September 1971

Type of Immunization	Greater Vancouver	Greater Victoria	Remainder of Province	Total
Total pupils newly enrolled.....	10,783	3,154	25,129	39,066
Smallpox.....	7,782 (72.2%)	2,227 (70.6%)	17,507 (69.7%)	27,516 (70.4%)
Diphtheria, pertussis, and tetanus....	8,712 (80.8%)	2,538 (80.5%)	19,587 (77.9%)	30,837 (78.9%)
Poliomyelitis.....	6,187 (57.4%)	1,918 (60.8%)	16,068 (63.9%)	24,173 (61.9%)
Rubeola (measles).....	6,839 (63.4%)	1,749 (55.5%)	12,642 (50.3%)	21,230 (54.3%)

Table XIII—Number of Pupils With Immunization Up to Date¹ at End of Grade I, June 1972

Type of Immunization	Greater Vancouver	Greater Victoria	Remainder of Province	Total
Total pupils enrolled.....	10,698	3,120	26,244	40,062
Smallpox.....	7,784 (72.8%)	2,292 (73.5%)	19,591 (74.6%)	29,667 (74.1%)
Diphtheria and tetanus.....	8,791 (82.2%)	2,675 (85.7%)	22,541 (85.9%)	34,007 (84.9%)
Poliomyelitis.....	6,952 (65.0%)	2,122 (68.0%)	19,504 (74.3%)	28,578 (71.3%)
Rubeola (measles).....	6,995 (65.4%)	1,862 (59.7%)	13,929 (53.1%)	22,786 (56.9%)
Rubella.....	7,760 (72.5%)	2,350 (75.3%)	17,302 (65.9%)	27,412 (68.4%)

¹ "Up to date" is defined as:

Smallpox: Number successfully vaccinated within the past five years.

Diphtheria and tetanus: Number who have either completed the primary series or had a reinforcing immunization during the past five years.

Poliomyelitis: Number who have had three or more doses of Sabin vaccine.

Rubeola: Number who have had one dose of live rubeola vaccine.

Rubella: Number who have had one dose of rubella vaccine.

Table XIV—Rubella Immunization Status of Grade V Girls, June 1972

Item	Greater Vancouver	Greater Victoria	Remainder of Province	Total
Total girls enrolled.....	5,974	1,795	14,245	22,014
Number immunized.....	5,164 (86.4%)	1,586 (88.4%)	12,039 (84.5%)	18,789 (85.4%)

Table XV—Enrolment in Public and Private Schools in British Columbia,
June 1972

Area	Grade Schools	Kindergartens	Schools for Retarded Children	Total
Greater Vancouver—				
Public.....	142,866	6,849	325	150,040
Private.....	7,626	(1)	126	7,752
Greater Victoria—				
Public.....	43,337	2,268	91	45,696
Private.....	1,712	192	1	1,905
Remainder of Province—				
Public.....	325,665	12,540	582	338,787
Private.....	9,207	4,730	397	14,334
Totals—				
Public.....	511,868	21,657	998	534,523
Private.....	18,545	4,922	524	23,991
Grand totals.....	530,413	26,579	1,522	558,514

¹ Figure not available.

Table XVI—Pupils Referred for Health Services

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.....	2,204	1,538	21,484	12,793
Hearing.....	1,055	517	7,894	2,394
Speech.....	150	89	1,680	711
Emotional.....	746	356	5,145	2,292
Skin conditions.....	1,146	590	4,659	1,852
Other.....	4,030	1,707	15,665	4,959
Totals.....	9,331	4,797	56,527	25,001
Per cent of enrolment.....	19.6	10.1	16.0	7.1

Of the total enrolment of 400,722 for the two areas shown in the table, 16.4 per cent were referred to the public health nurse and 7.4 per cent were referred by her for further care.

Table XVII—Registrations Accepted Under Various Acts

Registrations accepted under <i>Vital Statistics Act</i> —		
	1971	1972
Birth registrations	35,180	34,910
Death registrations	17,829	18,140
Marriage registrations	20,422	20,800
Stillbirth registrations	427	350
Adoption orders	2,578	1,980
Divorce orders	5,021	5,270
Delayed registrations of birth	371	320
Registrations of wills notices accepted under <i>Wills Act</i>	19,295	23,525
Total registrations accepted	101,123	105,295

Legitimations of birth affected under <i>Vital Statistics Act</i>	1971 219	1972 198
Alterations of given name effected under <i>Vital Statistics Act</i>	185	193
Changes of name under <i>Change of Name Act</i>	806	1,070
	<hr/>	<hr/>
Documents issued—		
Birth certificates	58,915	65,658
Death certificates	8,283	8,818
Marriage certificates	7,204	7,798
Baptismal certificates	17	26
Change of name certificates	1,001	1,220
Divorce certificates	239	248
Photographic copies	7,240	8,131
Wills notice certification	10,610	11,148
	<hr/>	<hr/>
Total certificates issued	93,509	103,047
	<hr/>	<hr/>
Nonrevenue searches for Government departments	13,718	12,500
Total revenue	\$385,282	\$414,712

Table XIX—Statistical Report of Tests Performed in 1971 and 1972, Main Laboratory, Nelson Branch Laboratory, and Victoria Branch Laboratory

Item	1971			1972		
	Main	Nelson	Victoria	Main	Nelson	Victoria
<i>Bacteriology Service</i>						
Enteric Section—						
Cultures—						
Salmonella/Shigella	16,999	212	3,936	15,591	262	4,441
Enteropathogenic <i>E. coli</i>	3,938	-----	1,361	3,576	-----	1,580
Food poisoning	135	-----	53	145	-----	34
Miscellaneous Section—						
Cultures—						
<i>C. diphtheriae</i>	5,666	36	942	6,281	48	1,503
Hæmolytic Staph/Strep	-----	335	1,105	-----	500	100
Miscellaneous	4,534	496	34	6,916	327	21
Fungus	3,443	-----	1,087	3,120	-----	-----
<i>N. gonorrhæe</i>	12,840	-----	2,394	14,061	-----	3,438
Smears, <i>N. gonorrhæe</i>	66,663	821	2,535	81,395	1,444	937
Animal virulence	105	-----	-----	119	-----	7
Tuberculosis Section—						
Cultures, <i>M. tuberculosis</i>	29,663	-----	2,089	30,107	-----	1,953
Smears, <i>M. tuberculosis</i>	19,852	46	1,730	20,337	10	1,635
Sensitivity tests	932	-----	-----	1,063	-----	-----
Atypical mycobacteria	248	-----	-----	251	-----	-----
Animal inoculation	420	-----	20	554	-----	5
Parasites—						
Fæces	8,490	49	1,683	11,535	-----	2,288
Pinworm swabs	1,516	-----	-----	1,364	49	-----
Water Microbiology Section—						
Presumptive/Confirmed coliform test	23,848	2,687	6,721	23,406	2,417	4,600
Completed coliform test	2,015	199	1,182	2,281	262	717
Fæcal coliform test	5,127	-----	1,523	4,779	-----	1,377
Fæcal streptococcal test	16	-----	-----	22	-----	-----
Standard plate count	2,416	-----	239	2,229	-----	149
Other tests (algæ, shellfish)	18	-----	-----	-----	-----	-----
Serology Section—						
VDRL—						
Blood (qualitative)	172,055	4,188	10,475	159,283	5,191	11,523
Blood (quantitative)	2,053	17	52	1,865	8	100
CSF	2,951	-----	693	2,739	-----	775
FTA-ABS	7,347	-----	-----	6,749	-----	-----
Darkfield (includes DFATP)	149	-----	6	368	-----	11
Agglutinations — Widal, Brucella, Paul-Bunnell, other	6,480	350	640	5,666	341	356
ASTO	8,954	-----	531	8,932	-----	775
<i>Virology Service</i>						
Virus isolation—						
Tissue culture	2,424	-----	-----	3,384	-----	-----
Rubella	1,107	-----	-----	1,904	-----	-----
Embryonated egg	348	-----	-----	345	-----	-----
Hæmadsorption	255	-----	-----	192	-----	-----
Serological identification—						
Hæmagglutination inhibition—						
Rubella	22,515	-----	-----	27,604	-----	-----
Other viruses	3,185	-----	-----	1,077	-----	-----
Complement fixation	4,665	-----	-----	2,126	-----	-----
Neutralization	3,894	-----	-----	3,946	-----	-----
Totals	447,266	9,436	40,941	455,312	10,859	38,320
Combined totals	497,643			504,491		

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

Emergency hospitals	15
Advanced treatment centres	44
Casualty collecting units	65
Hospital disaster supplies kit	236
Blood donor pack	21
Number of municipalities	74
Number of storage locations	110
Number of Emergency Health Service units	185

Table XXI—Licensing of Practical Nurses

(Disposition of applications received since inception of programme in 1965 to December 31, 1972)

Received	8,400
Approved—	
On the basis of formal training	4,881
On the basis of experience only—	
Full licence	396
Partial licence	875
	— 1,271
	6,152
Rejected	1,195
Deferred pending further training, etc.	701
Deferred pending receipt of further information from applicants	96
Awaiting assessment at December 31, 1972	256
	—
Total	8,400
Number of licences issued to December 31, 1972	5,457 ¹
Number of practical nurses holding currently valid licences at December 31, 1972	4,336 ²

¹ The number of licences issued (5,457) is less than the number of applications approved (6,152) because some persons whose applications were approved did not take the final action to complete licensing.

² The number of currently valid licences (4,336) is less than the number of licences issued (5,457) because some persons who have received licences at some time had not requested the annual renewal.

