PROVINCE OF BRITISH COLUMBIA

Seventieth Annual Report of the

Public Health Services of British Columbia

HEALTH BRANCH

DEPARTMENT OF HEALTH SERVICES AND HOSPITAL INSURANCE

YEAR ENDED DECEMBER 31

1966

Printed by A. SUTTON, Printer to the Queen's Most Excellent Majesty
in right of the Province of British Columbia.
1967

DEPARTMENT OF HEALTH SERVICES AND HOSPITAL INSURANCE (HEALTH BRANCH)

The Honourable W. D. BLACK
Minister of Health Services and Hospital Insurance

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Deputy Minister of Health and Provincial Health Officer

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Chief Public Health Inspector

R. G. SCOTT, C.S.I.(C.)
Consultant Public Health Inspector

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Director, Division of Preventive Dentistry

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Director, Division of Occupational Health

J. MCDIARMID
Departmental Comptroller

OFFICE OF THE MINISTER OF HEALTH SERVICES
AND HOSPITAL INSURANCE,
VICTORIA, B.C., January 10, 1967.

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

MAY IT PLEASE YOUR HONOUR:

The undersigned respectfully submits the Seventieth Annual Report of the Public Health Services of British Columbia for the year ended December 31, 1966.

W. D. BLACK,
Minister of Health Services and Hospital Insurance.

DEPARTMENT OF HEALTH SERVICES AND HOSPITAL INSURANCE
(HEALTH BRANCH),
VICTORIA, B.C., January 4, 1967.

The Honourable W. D. Black,
Minister of Health Services and Hospital Insurance,
Victoria, B.C.

SIR,—I have the honour to submit the Seventieth Annual Report of the Public Health Services of British Columbia for the year ended December 31, 1966.

J. A. TAYLOR, B.A., M.D., D.P.H.,
Deputy Minister of Health.

HEALTH BRANCH ORGANIZATION

MINISTER OF HEALTH SERVICES AND HOSPITAL INSURANCE

DEPUTY MINISTER OF HEALTH

BUREAU OF LOCAL HEALTH SERVICES

DIVISION OF PUBLIC HEALTH NURSING
Development of public health nursing throughout the Province; consultative service to local health units.

DIVISION OF PUBLIC HEALTH ENGINEERING
Consultative services to local health units, municipal engineers, and private engineers.

DIVISION OF PREVENTIVE DENTISTRY
Development of preventive dentistry throughout the Province; consultative service through regional dental consultants.

DIVISION OF EPIDEMIOLOGY
Evaluation and analysis of information on reportable diseases; promotion of control methods; consultative service to local health departments.

NUTRITION SERVICE
Consultative service to local health units, institutions, and other Government departments.

EMERGENCY HEALTH SERVICE
Organization and operation of the Emergency Health Services Plan for British Columbia; liaison with Provincial Civil Defence Co-ordinator.

BUREAU OF ADMINISTRATION

ADMINISTRATIVE OFFICES
General business management; personnel administration; budget; buildings and office accommodation; assistance in management of National Health Grants.

DIVISION OF VITAL STATISTICS
Recording vital and other statistics; statistical research for public health services and evaluation of their programmes.

DIVISION OF PUBLIC HEALTH EDUCATION
General consultative service; in-service education; school health education; audio-visual aids and written materials.

LOCAL HEALTH SERVICES

BUREAU OF SPECIAL PREVENTIVE AND TREATMENT SERVICES

DIVISION OF TUBERCULOSIS CONTROL
Over-all direction of tuberculosis control services; in-patient care (two hospitals); out-patient care; travelling clinics.

DIVISION OF VENEREAL DISEASE CONTROL
Over-all direction of venereal disease control programme; operation of clinics; consultative service to public health staff and private physicians.

DIVISION OF LABORATORIES
Performing all types of public health laboratory tests; distribution of certain biological products free of charge to health departments and private physicians.

DIVISION OF OCCUPATIONAL HEALTH
Evaluating occupational health hazards; development of occupational health programmes; advisory service to industry and other Government departments.

DIVISION OF REHABILITATION SERVICES
Development of a co-ordinated rehabilitation programme in co-operation with private physicians, community agencies, and other Government departments.

RELATED HEALTH SERVICES
Liaison is maintained with voluntary health agencies that receive financial aid from the Government; they are assisted in policy-making and there is co-ordination of their activities.

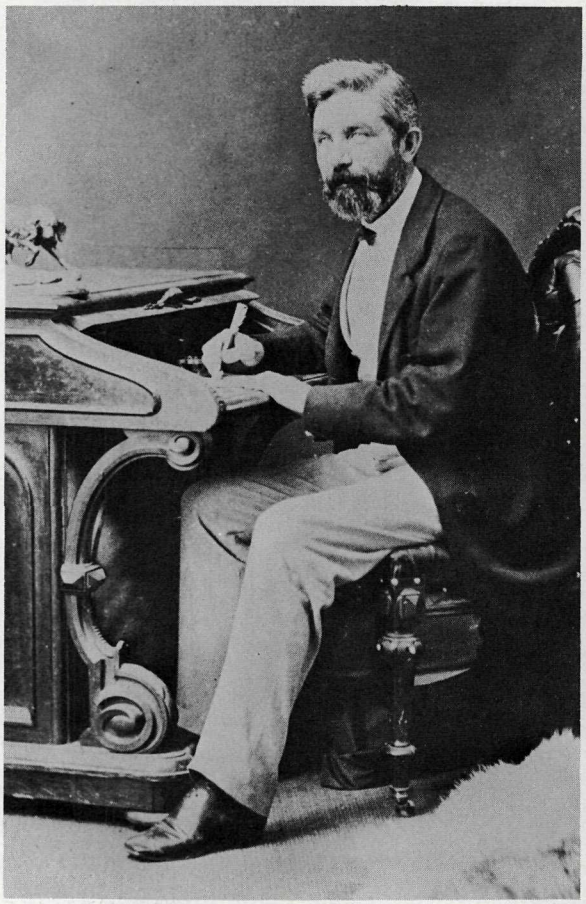
The Health Branch is one of the three branches of the Department of Health Services and Hospital Insurance, together with the branches of Mental Health Services and the British Columbia Hospital Insurance Service. Each is headed by a Deputy Minister under the jurisdiction of the Minister of Health Services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

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 functions and responsibilities of these divisions are outlined on the preceding page.

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

In the year of British Columbia's Centennial it is appropriate to review, at least briefly, the Province's public health services since 1866. No description would be complete were it not supplemented by illustrations and photographs of bygone years. Some of these appear on the following pages.

It is hoped they will contribute to a better understanding of what a modern public health organization means to our people.

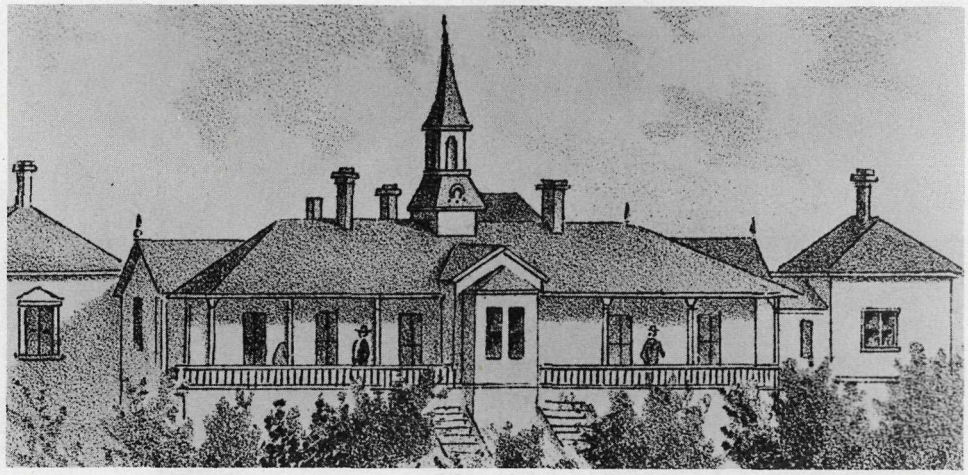


Dr. John Sebastian Helmcken, the first physician to practise his profession in British Columbia. He came to the Pacific Coast in the service of the Hudson's Bay Company in 1850 and became a leading member of the medical fraternity in the Province.

Dr. Helmcken's medicine chest—a typical ship's medicine chest of his day. It was often the only available source of drugs and instruments to treat sickness or accident. Drugstores were then unheard of in most parts of the Province.

SOME OF THE FIRST HOSPITALS IN BRITISH COLUMBIA

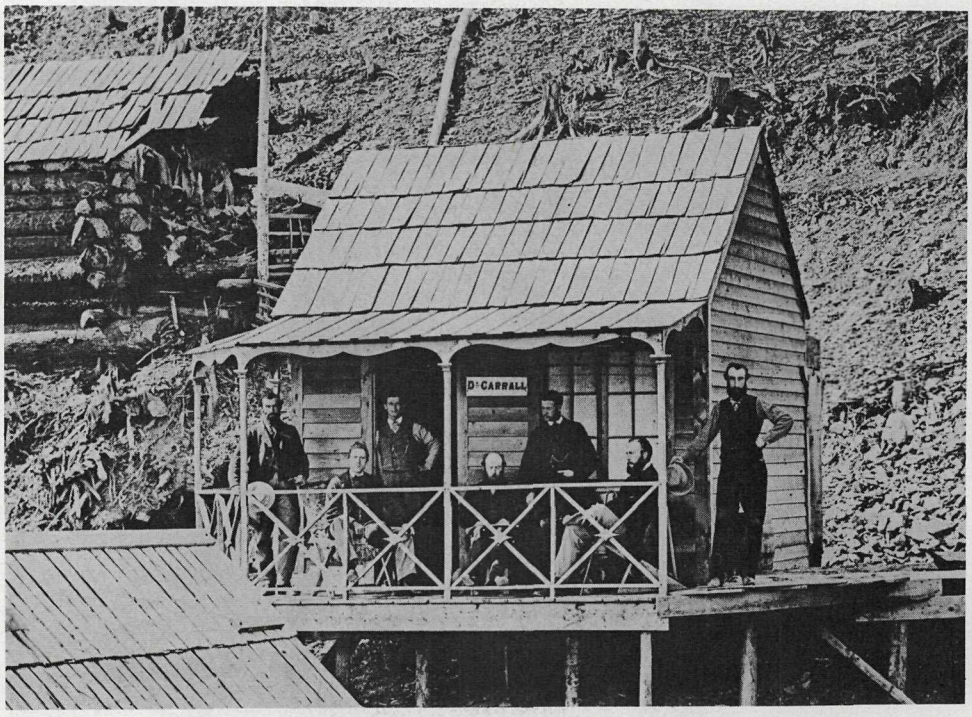
An early hospital in Esquimalt (*circa* 1865).



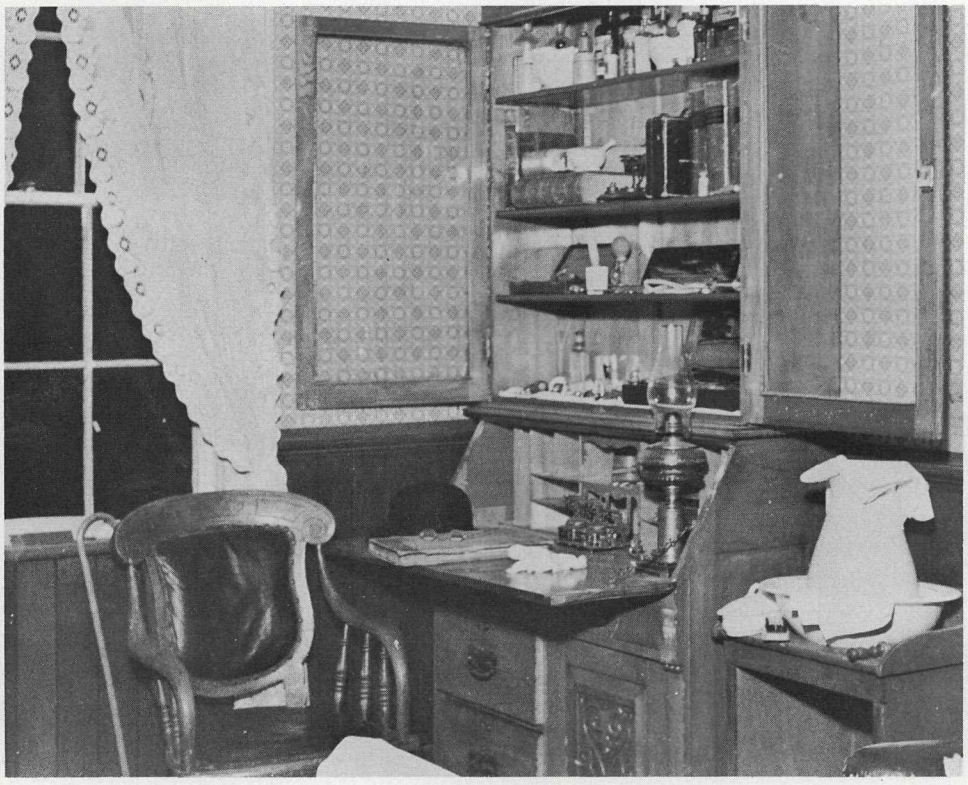
The Royal Hospital in Victoria, precursor of today's Royal Jubilee Hospital (*circa* 1869).

The Royal Cariboo Hospital at Williams Creek, near Barkerville (*circa* 1895).

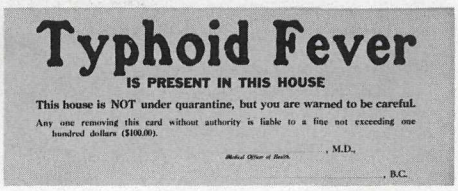
The first drug-store in British Columbia was Shotbolt's of Victoria, seen here as it appeared in 1871.

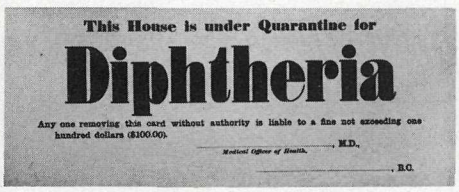


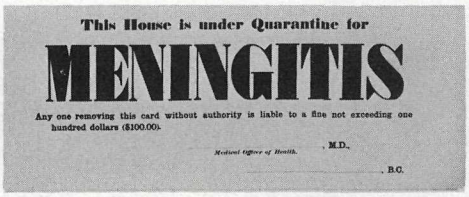
One of the early doctors who spent some time in the Cariboo country was Dr. R. W. W. Carrall, seen here at his office at Grouse Creek, near Barkerville, with some visitors (*circa* 1867).



The interior of a doctor's office in Barkerville (*circa* 1870).



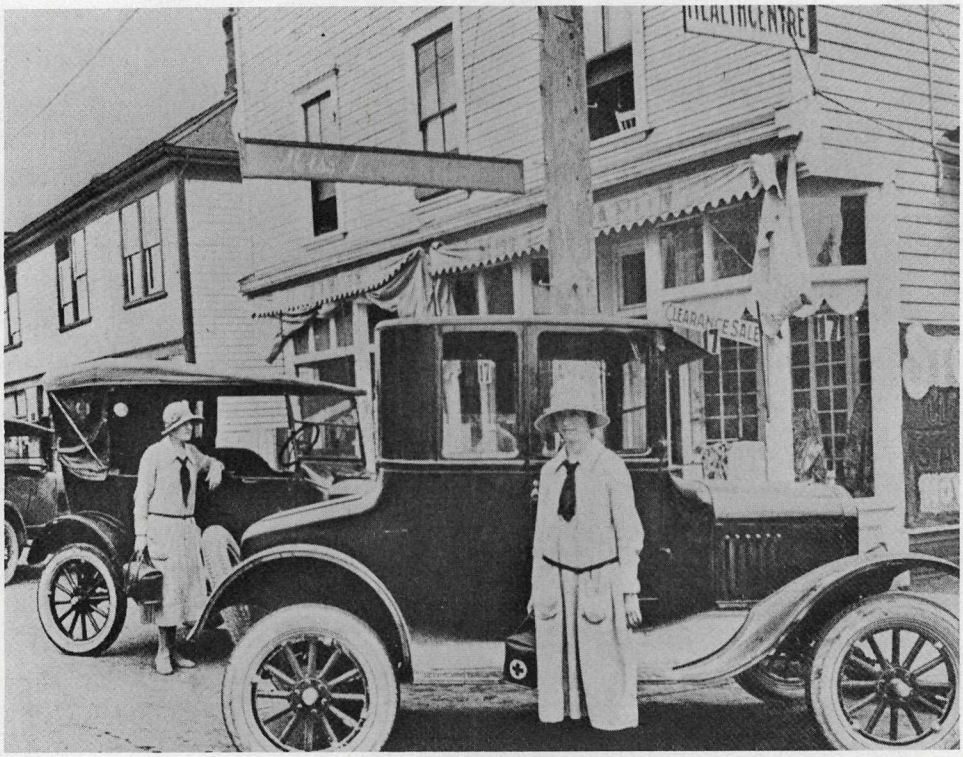




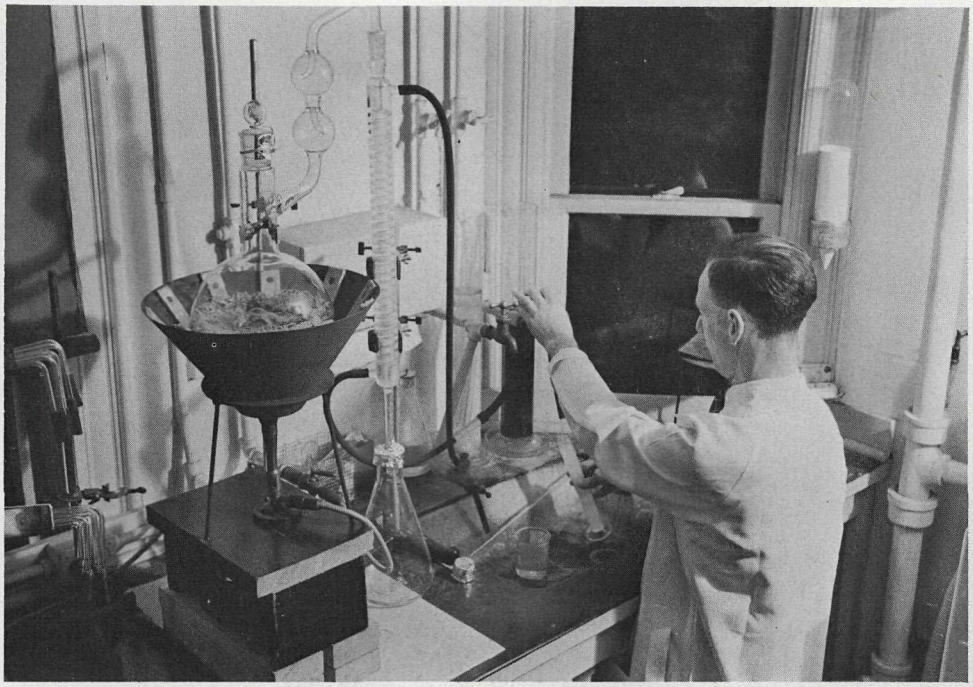
The quarantine notice on the door was a too familiar sign in the early 1900's; it usually involved several weeks' confinement. The great advances in medicine and intensive application of public health principles have so effectively diminished the need for these warnings that few of the present generation have ever seen one.

The King Edward Sanatorium was opened at Tranquille, B.C., in 1907, the largest tuberculosis institution in Western Canada at that time. The main building (above) was completed in 1910. Operated by the Anti-tuberculosis Society of British Columbia, it was taken over by the Provincial Government in 1921 and renamed Tranquille Sanatorium.

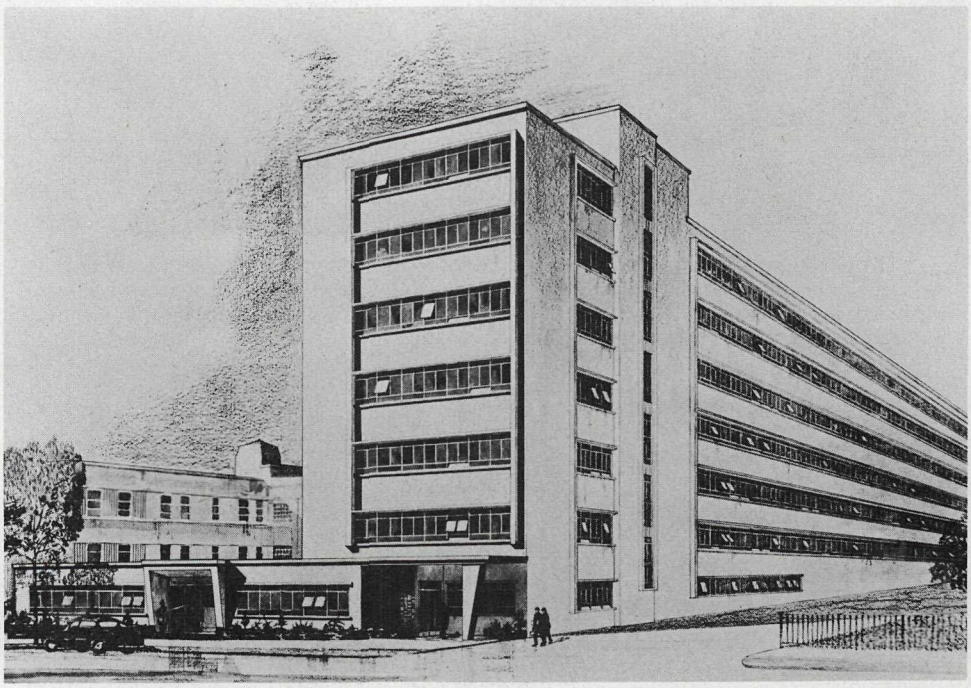
Summer and winter, fresh air was considered an indispensable part of the treatment for tuberculosis. Patients here are seen enjoying a wintry scene on a balcony at Tranquille Sanatorium (1910).



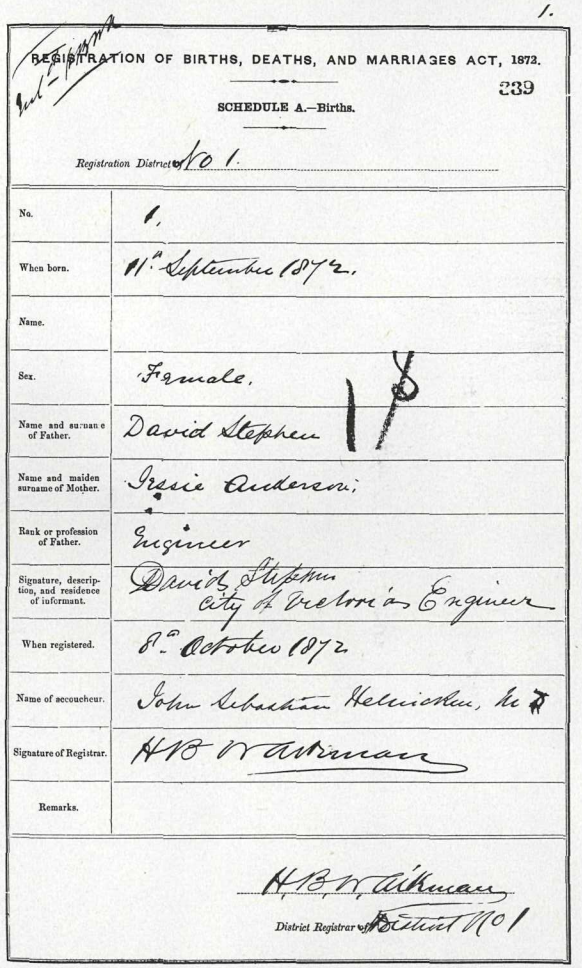
The public health nurse was the forerunner of British Columbia's modern local health services. The first public health nurse was appointed in 1917, and the service was expanded in the early 1920's. Here are two nurses of the Cowichan Health Centre, pictured as they stand proudly beside their "tin lizzies."



It was in makeshift cramped quarters such as this that the Provincial Laboratories had their beginning (1931). It is difficult to believe today that the staff could maintain adequate standards of performance (as they did) and increase their work load each year.



In the Provincial Health Building in Vancouver, opened in 1955, the new Provincial Laboratories occupied three floors. There is more space and modern eequipment for the many complex tests required today.



1.

REGISTRATION OF BIRTHS, DEATHS, AND MARRIAGES ACT, 1872.

339

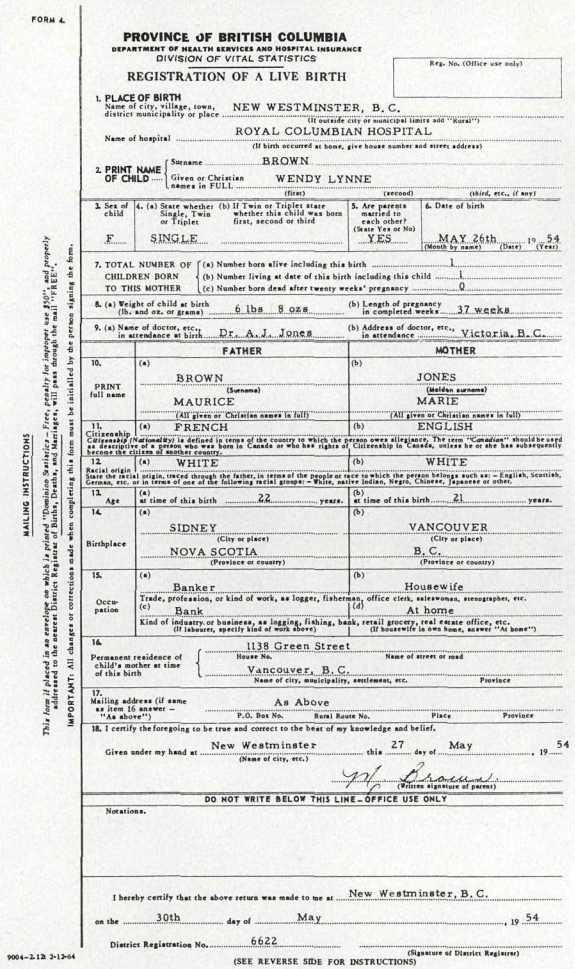
SCHEDULE A.—Births.

Registration District of No 1.

No.	1.
When born.	11th September 1872.
Name.	
Sex.	Female.
Name and surname of Father.	David Stephen
Name and maiden surname of Mother.	Jessie Anderson
Rank or profession of Father.	Engineer
Signature, description, and residence of informant.	David Stephen City of Victoria Engineer
When registered.	8th October 1872.
Name of accoucheur.	John Sebastian Helmcken, Esq
Signature of Registrar.	H B W Aikman
Remarks.	

H. B. W. Aikman

District Registrar of District No 1



FORM 4.

PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF HEALTH SERVICES AND HOSPITAL INSURANCE

DIVISION OF VITAL STATISTICS

REGISTRATION OF A LIVE BIRTH

Reg. No. (Office use only)

1. PLACE OF BIRTH
Name of city, village, town, district municipality or place: NEW WESTMINSTER, B. C.
(If outside city or municipal limits add "Rural")
Name of hospital: ROYAL COLUMBIAN HOSPITAL
(If birth occurred at home, give house number and street address)

2. PRINT NAME OF CHILD — Surname: BROWN
Given or Christian names in FULL: WENDY LYNNE
(first) (second) (third, etc., if any)

3. Sex of child	4. (a) State whether Single, Twin or Triplet	(b) If Twin or Triplet state whether this child was born first, second or third	5. Are parents married to each other? (State Yes or No)	6. Date of birth
F	SINGLE		YES	MAY 26th 19 54 (Month by name) (Date) (Year)

7. TOTAL NUMBER OF CHILDREN BORN TO THIS MOTHER
(a) Number born alive including this birth: 1
(b) Number living at date of this birth including this child: 1
(c) Number born dead after twenty weeks' pregnancy: 0

8. (a) Weight of child at birth (lb. and oz. or grams): 6 lbs 8 ozs
(b) Length of pregnancy in completed weeks: 37 weeks

9. (a) Name of doctor, etc., in attendance at birth: Dr. A. J. Jones
(b) Address of doctor, etc., in attendance: Victoria, B. C.

	FATHER	MOTHER
10. PRINT full name	(a) BROWN (Surname) MAURICE (All given or Christian names in full)	(b) JONES (Maiden surname) MARIE (All given or Christian names in full)
11. Citizenship *Citizenship (Nationality)* is defined in terms of the country to which the person owes allegiance. The term "*Canadian*" should be used as descriptive of a person who was born in Canada or who has rights of Citizenship in Canada, unless he or she has subsequently become the citizen of another country.	(a) FRENCH	(b) ENGLISH
12. Racial origin State the racial origin, traced through the father, in terms of the people or race to which the person belongs such as:—English, Scottish, German, etc. or in terms of one of the following racial groups:—White, native Indian, Negro, Chinese, Japanese or other.	(a) WHITE	(b) WHITE
13. Age at time of this birth	(a) 22 years.	(b) 21 years.
14. Birthplace	(a) SIDNEY (City or place) NOVA SCOTIA (Province or country)	(b) VANCOUVER (City or place) B. C. (Province or country)
15. Occupation Trade, profession, or kind of work, as logger, fisherman, office clerk, saleswoman, stenographer, etc.	(a) Banker	(b) Housewife
Kind of industry or business, as logging, fishing, bank, retail grocery, real estate office, etc.	(c) Bank (If labourer, specify kind of work above)	(d) At home (If housewife in own home, answer "At home")

16. Permanent residence of child's mother at time of this birth: 1138 Green Street (House No. / Name of street or road); Vancouver, B. C. (Name of city, municipality, settlement, etc. / Province)

17. Mailing address (if same as item 16 answer — "As above"): As Above (P.O. Box No. / Rural Route No. / Place / Province)

18. I certify the foregoing to be true and correct to the best of my knowledge and belief.

Given under my hand at New Westminster (Name of city, etc.) this 27 day of May, 19 54

(Witness signature of parent)

DO NOT WRITE BELOW THIS LINE—OFFICE USE ONLY

Notations.

I hereby certify that the above return was made to me at New Westminster, B. C.

on the 30th day of May, 19 54

District Registration No. 6622

(Signature of District Registrar)

(SEE REVERSE SIDE FOR INSTRUCTIONS)

MAILING INSTRUCTIONS

This form if placed in an envelope on which is placed "Dominion Statistics — Free, penalty for improper use $50", and properly addressed to the nearest District Registrar of Births, Deaths, and Marriages, will pass through the mail "FREE".

IMPORTANT: All changes or corrections made when completing this form must be initialled by the person signing the form.

9004-2-12 2-12-64

British Columbia's first birth registration took place on October 8, 1872. The attending doctor, or "accoucheur," was Dr. John Sebastian Helmcken. The simple 1872 form is compared with a sample of the Registration of Birth form in use today.

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Seventieth Annual Report of the Public Health Services of British Columbia

HEALTH BRANCH

DEPARTMENT OF HEALTH SERVICES AND HOSPITAL INSURANCE

YEAR ENDED DECEMBER 31, 1966

DEPUTY MINISTER'S INTRODUCTION

1866–1966

ONE HUNDRED YEARS OF PUBLIC HEALTH IN BRITISH COLUMBIA

The Province in 1966 has been celebrating the 100th year since the two colonies of Vancouver Island and British Columbia were united. From a public health point of view, there is a fascination in looking back at those early days.

In 1866 there was no public health organization. There were only 24 doctors in the territories; there were only five hospitals, and these, in design, construction, and equipment, could not be compared with even the smallest community hospital in British Columbia today. More than two years were to pass before there was legislation to authorize a Provincial Board of Health, and almost 30 years passed before such a board actually functioned. Any public health measures that were taken were usually to cope with an emergency, such as smallpox, quarantine, open sewage running in the streets, placement of cemeteries, and removal of dead human and animal bodies. The historical records show that these situations had to be met—if they were met at all—by local authorities who rarely had the money or manpower to take care of these extra services. And, as far as his own health was concerned, the average citizen was very much on his own resources.

One of our annual reports at the turn of the century had this to say:—

" The general health throughout the Province has been about the same as previous years. All preventable diseases flourish as before. Typhoid fever, scarlet fever, diphtheria, measles, etc., are constantly in evidence. Every one of these could be prevented did each citizen know what to do and do it, and did local authorities not hesitate to meet expense."

And a little later there is this quotation from a pamphlet addressed to children:—

" Don't spit on your slate or use any slate that others have spit upon. Don't eat candies or chewing gum that others have sucked or bitten pieces off."

Public health has come a long way since then. Today, when this new word " medicare " is already commonplace, the diseases whose very mention in 1866 spread fear into the hearts of men have not for many years been regarded with such dread; smallpox, typhoid, and cholera are now almost unknown, and virtually all other communicable diseases experienced on this continent are under control.

We who have inherited an efficient well-organized public health service are not without admiration for the pioneer labours of our predecessors. Often, against lethargy and ignorance, they surmounted difficult obstacles to pursue their cause. Their names are legion, but we think especially of the men whose leadership and

selfless assumption of responsibility placed British Columbia's public health services on the road to their present high standard.

In the van of these public servants was Dr. John Chapman Davie, a brilliant surgeon, who was the first Health Officer appointed under Provincial auspices, and who also served as Chairman of British Columbia's first Board of Health in the 1890's. He and his fellow members, it should be noted, received no salary.

Dr. Charles J. Fagan, regarded as our first full-time Provincial Health Officer, was appointed Secretary to the Provincial Board of Health in 1899. He was, in effect, the chief executive officer. Dr. Fagan will always be remembered, if only for two of his many achievements—the successful campaign against tuberculosis and (the first Province in Canada to introduce it) the compulsory medical examination of school-children.

In 1916 Dr. Henry Esson Young succeeded Dr. Fagan, and in his 23 years at the helm, British Columbia's public health service progressed from a small struggling group into a well-balanced smooth-working organization. Dr. Young, whose appointment was officially changed in 1924 to that of Provincial Health Officer, was the guiding hand in many new developments. His regime saw the first public health nurses in action and the opening of the first health units. In these developments there were many heartening displays of public-spirited effort, and none was more outstanding than the contribution made by the women of British Columbia. Spearheaded by such bodies as the Women's Institutes, they gave leadership and unflagging support in the setting-up of the early public health nursing services. Public acceptance in other areas followed. The Red Cross Society and the Victorian Order of Nurses, too, were prominently in the picture and, from outside Canada, financial help from the Rockefeller Foundation supported the establishment of three of the first health units.

Before he died in 1939, Dr. Young was able to see the formation of the Provincial Health Services, much as they are today. The Divisions of Tuberculosis Control, Venereal Disease Control, Preventive Dentistry, Laboratories, Public Health Nursing, and Sanitation were either in operation or in the advanced planning stage.

Many readers will remember my predecessor and the man who succeeded Dr. Young as Provincial Health Officer, Dr. G. F. Amyot. He, too, had been deeply involved in the development of Provincial Health Services and had also played a large part in the formation of the Greater Vancouver Metropolitan Health Committee in 1946, a plan which at that time was unique on the North American Continent. When he retired in 1961, Dr. Amyot had seen our health services grow until there were 18 health units, which, with the metropolitan departments of Greater Victoria and Greater Vancouver, extended service to almost 100 per cent of the population.

Public health, in addition to its continuing responsibilities in the important fields of preventive medical services, communicable-disease control, and maternal and child health services, is turning its attention more and more to such needful areas as home nursing care, geriatric care, and special services for the pre-school and school child.

During 1966 some of the significant features involving the health of the Province were:—

- A consistently rising POPULATION, to a mid-year estimate of 1,862,000 people. This is 73,000 persons more than last year, an increase which in itself is more than twice the estimated total population of the Province at the time of Confederation!

• There was a continued increase in the MARRIAGE RATE, which rose to 7.9 per 1,000 population. This was still considerably below the peak rate of 12.5 established in 1942.

• The BIRTH RATE continued to decline, falling to a rate of 17.8 per 1,000 population, substantially less than the peak rate of 26.1 for 1957.

• Predictably, in view of the low rate of last year, the DEATH RATE was up slightly to 8.7 per 1,000 population. Mortality from the three leading causes of death—heart disease, cerebrovascular lesions (strokes), and cancer—were contributing factors.

• The ACCIDENTAL DEATH RATE of 72.0 per 100,000 population showed no change from that recorded a year ago. There was a recognizable increase in motor-vehicle accident fatalities, while the rate of deaths from other accidents decreased. The suicide rate dropped substantially.

• The INFANT MORTALITY RATE at 23.0 per 1,000 live births was up over the record low of 20.6 recorded last year.

• The MATERNAL MORTALITY RATE was at 0.4 per 1,000 live births, compared with 0.3 shown in 1965.

• DIPHTHERIA and POLIOMYELITIS, as has been the case over the past three years, remained non-existent, a credit to the continuing immunization programme that is maintained year by year.

• An outbreak of Types A and B INFLUENZA occurred in the more densely populated area of the Lower Mainland in early February and spread to other parts of the Province during March and April. The Type A strain proved to be a new strain not previously isolated and was designated Influenza A_2(Canada)66 by the World Health Organizational Influenza Centre.

• The incidence of VENEREAL DISEASES showed improvement as far as infectious syphilis was concerned as only 70 cases were reported in 1966, in contrast to 165 in 1965 and 304 in 1964. Gonorrhœa, on the other hand, maintained the same high-plateau incidence of 5,600 cases, pin-pointing the need for additional concentrated control efforts.

• The TUBERCULOSIS survey programme resulted in 146,094 persons receiving diagnostic examinations to complete a total tuberculosis survey of the Province that has taken eight years of operation. There are 20,000 known cases of tuberculosis under treatment throughout British Columbia.

• In the field of REHABILITATION, 1,518 handicapped persons were given assessment toward vocational rehabilitation, of which 101 have completed rehabilitation and 1,173 are receiving some measure of service. In addition, the six children with thalidomide deformities, now attaining school age, are being maintained, while the life-saving benefits of peritoneal dialysis have been continued to a small group of individuals requiring this therapy.

• CANCER services operated by the British Columbia Cancer Foundation provided diagnostic services to 2,402 new patients, 6,502 follow-up examinations, and 52,160 X-ray and cobalt treatments. The 13 consultative clinics held 86 sessions during the year, at which 173 new patients were seen and 3,818 follow-up examinations were given.

• The G. F. STRONG REHABILITATION CENTRE admitted 478 patients, of whom 191 received consultation services and 287 were accepted for active therapy. There were 115 severely handicapped persons discharged, of whom 67 were retrained to complete ability.

• Patient aid in MULTIPLE SCLEROSIS, handled through the Multiple Sclerosis Society, was available to 550 patients; of these, 350 were resident in the Vancouver area.

• In the field of ARTHRITIS and RHEUMATISM, 1,000 physicians referred between five and six thousand patients to CARS therapists. Sixty-three per cent of these patients had some form of arthritis and the remainder some other disabling condition. Those patients received about 70,000 treatments.

• Amalgamation of the administration of the British Columbia and Vancouver epilepsy organizations promoted more efficient use of funds in the interests of the approximately 100 patients.

• The families of children afflicted with CYSTIC FIBROSIS have continued to receive assistance through provision of drugs and equipment through the Cystic Fibrosis Foundation.

• Educational and therapeutic services to CEREBRAL PALSY patients have been maintained through the auspices of the Cerebral Palsy Association of British Columbia.

• In the field of VITAL STATISTICS, 80,260 registrations of vital events were accepted, while 81,264 certificates were issued.

• Demands for LABORATORY tests in the fields of bacteriology, virology, and chemistry have continued to mount. This is evident in the fact that the routine work load in the main laboratories rose by almost 1 per cent to 1,040,000 units, involving 357,763 tests.

• Efforts were continued to promote a more active INDUSTRIAL HYGIENE programme to detect hazards, educate users, and recommend operational procedures involving X-ray and radioactive isotopes.

• AIR POLLUTION conditions received increasing attention as atmospheric sampling stations were established in various parts of the Province.

• IMMUNIZATION procedures totalling 379,479 doses were performed by public health nurses during the year.

• MATERNAL and CHILD HEALTH was advanced by the 527,613 nursing services rendered to these groups of the population.

• Health services to the AGEING have been on the increase, as is evident from the fact that 79 per cent of the home nursing services is directed to persons over 60 years of age.

• Consultative services in PUBLIC HEALTH ENGINEERING continued to be directed toward improvement in all waterworks and sewerage systems in the Province. This involves approval of all plans, as was done for 112 waterworks systems and 110 sewerage systems, and in constant efforts to improve the standards of operation by education of the operators in charge.

• Constant surveillance of SHELLFISH production and harvesting was maintained in the interests of the industry and in keeping with the international agreement governing export of these products.

• Concentration on NUTRITION was increased to convey a better understanding of the healthful features of an adequate diet.

• The great increase in land subdivision has created demands for consultative services of the PUBLIC HEALTH INSPECTORS in connection with the approval of sites and the possibilities for disposal of private sewage.

• In PREVENTIVE DENTISTRY the community preventive dental programmes continued to operate successfully, while a travelling dental programme was available to 45 communities having no resident dentist. The availability of transportable dental equipment with high-speed rotor units contributes to making such programmes possible.

• PUBLIC HEALTH EDUCATION continued to provide assistance and consultative services to the health departments at the community level.

In the following sections of the Report dealing with the programmes and services of the Health Branch, there appear more detailed accounts of the year's activities of British Columbia's present-day public health services.

ADMINISTRATION

The Bureau of Administration consists of
—the general offices in Health Branch headquarters,
—the Division of Vital Statistics,
—the Division of Public Health Education.

The Bureau Director is a member of the Deputy Minister's central policy-making and planning group. This report of the Bureau as a whole deals with administrative and organizational matters relating to the Health Branch's operations generally. (Reports of the Divisions of Vital Statistics and Public Health Education appear elsewhere in this volume.)

ORGANIZATION AND STAFF

The following table shows the various parts (divisions, offices, clinics, etc.) of the Health Branch with their locations and the approximate numbers of persons employed at the end of the year:—

Health Branch headquarters (Victoria), Legislative Buildings, Victoria	40	
Health Branch office (Vancouver), 828 West Tenth Avenue, Vancouver	39	
	—	79
Division of Vital Statistics—		
Headquarters and Victoria office, Legislative Buildings, Victoria	64	
Vancouver office, 828 West Tenth Avenue, Vancouver	22	
	—	86
Division of Tuberculosis Control—		
Headquarters, 2647 Willow Street, Vancouver	15	
Willow Chest Centre, 2647 Willow Street, Vancouver	105	
Pearson Hospital, 700 West 57th Avenue, Vancouver	267	
Victoria and Island Chest Clinic, 1902 Fort Street, Victoria	11	
New Westminster Chest Clinic, Sixth and Carnarvon, New Westminster	6	
Travelling clinics, 2647 Willow Street, Vancouver	13	
Survey programme, 2647 Willow Street, Vancouver	6	
	—	423
Division of Laboratories—		
Headquarters and Vancouver Laboratory, 828 West Tenth Avenue, Vancouver	79	
Nelson Branch Laboratory, Kootenay Lake General Hospital	1	
Victoria Branch Laboratory, Royal Jubilee Hospital[1]	—	
	—	80
Division of Venereal Disease Control—		
Headquarters and Vancouver clinic, 828 West Tenth Avenue, Vancouver	17	
New Westminster clinic, 537 Carnarvon Street, New Westminster[2]	—	
	—	17
Local Public Health Services—		
Health units—		
East Kootenay, Cranbrook	24	
Selkirk, Nelson	14	
West Kootenay, Trail	19	
North Okanagan, Vernon	23	
South Okanagan, Kelowna	36	
South Central, Kamloops	28	
Upper Fraser Valley, Chilliwack	27	
Central Fraser, Mission	24	
Boundary, Cloverdale	47	
Simon Fraser, New Westminster	29	

[1] Services are purchased from the Royal Jubilee Hospital, which uses its own staff to perform the tests.
[2] The New Westminster clinic has a part-time employee.

Local Public Health Services—*Continued*		
Health units—*Continued*		
Coast Garibaldi, Powell River	14	
Saanich and South Vancouver Island, 780 Vernon Avenue, Victoria	40	
Central Vancouver Island, Nanaimo	48	
Upper Island, Courtenay	22	
Cariboo, Williams Lake	16	
Skeena, Prince Rupert	23	
Peace River, Dawson Creek	19	
Northern Interior, Prince George	33	
Nursing district—Telegraph Creek	1	
	—	463
Total		1,172

There were also part-time employees in many of the places listed. These totalled the equivalent of approximately 70 full-time employees.

The approximate numbers of employees by major categories were as follows at the year's end:—

Physicians in local health services	21
Physicians in institutional and other employment	16
Nurses in local health services	300
Nurses in institutions	109
Public health inspectors	53
Dentists in local health services	5
Bacteriologists	23
Laboratory technicians	28
Public health engineers	5
Statisticians	7
Others	605
Total	1,172

TRAINING

During 1966, 16 employees of the Health Branch completed postgraduate training of one academic year's duration and 12 employees commenced such training, usually leading to a diploma or master's degree in one of the public health specialties. National Health Grants were used to defray part of the costs. In accordance with the usual policy, the trainees were required to sign agreements to return to employment with the Health Branch for specified periods following completion of their courses.

The types of training, universities or other training centres (in parentheses), and numbers trained were as follows:—

Completed training—	
Diploma in Public Health Nursing (British Columbia, 11; Western Ontario, 1)	12
Nursing Supervision and Administration (Toronto)	1
Diploma in Public Health (Toronto)	1
Master of Public Health Dentistry (Michigan)	1
Certification in Public Health Medicine (British Columbia)	1
Total	16
Commenced training—	
Diploma in Public Health Nursing (British Columbia)	5
Nursing Supervision and Administration (Toronto)	2
Diploma in Public Health (Toronto)	1
Master of Public Health Nursing (California)	1

Commenced training—*Continued*

Master of Sanitary Engineering (Washington)	1
Master of Public Health (Minnesota)	1
Certification in Internal Medicine (Belfast)	1
Total	12

Shorter courses of training were also provided to some members of the Health Branch. Here again National Health Grants helped to defray the costs. The courses and numbers attending were as follows:—

Short-term training—

Nursing—Retarded Children (Woodlands School, Vancouver)	20
Current Practices in Water Microbiology (U.S. Public Health Service, Cincinnati)	1
Refresher Course for Medical Health Officers (University of Toronto)	3
Oral Cancer (California Health Department, Sacramento)	2
Venereal Disease Epidemiology (U.S. Department of Public Health, Los Angeles)	1
Sewage Treatment Plant Operations (Ontario Water Resources Commission)	1
Rehabilitation of the Handicapped (Canadian Rehabilitation Council, Winnipeg)	3
Isolation and Identification of the Rubella Virus (Hospital for Sick Children, Toronto)	1
Hospital Hygiene and Infection Control (University of Washington, Seattle)	1
Venereal Disease Diagnosis (Washington State Health Department, Seattle)	1
Water Pollution Control (Water Pollution Control Federation, Kansas City)	1
Public Health Administration (Health Branch)	45
Psychiatric Nursing Affiliation (Riverview Hospital, Essondale, and Woodlands School, Vancouver)	16
Hospital Administration (University of Saskatchewan)	1
Total	97

Training for the field staff in general was again provided by the Public Health Institute which was held at the University of British Columbia, May 17th to 20th.

ACCOMMODATION

During 1966 there were significant developments in construction or modification of facilities under the jurisdiction of the Health Branch.

In Vancouver.—At the Division of Tuberculosis Control's Willow Chest Centre, the operating-rooms were modified and renovated to provide for heart surgery and to improve the facilities for thoracic surgery. At the year's end certain items of equipment had yet to be installed.

At Pearson Hospital, wards were modified to accommodate extended-care patients.

In Local Health Services.—Two new community health centres were built, two were enlarged, and one was modified and improved. Construction or extension of community health centres in nine other places was in various stages of planning.

ACCIDENT PREVENTION

During the period January to September (the last month of 1966 for which statistics were available at the time of writing this report), the Health Branch's disabling-injury frequency rates remained considerably below the rates for 1965. The downward trend was particularly noticeable in June and again in August, when the rate dropped to the lowest point it had reached since April, 1964.

The actual count of time-loss (disabling) accidents was one, two, or three each month among a staff of over 1,100 employees. Most of the accidents occurred in one particular section of the Health Branch, and the encouraging trend in the rates noted above was undoubtedly the result of concentrating on a preventive programme in that section.

LICENSING OF PRACTICAL NURSES

The licensing programme is the responsibility of the Council of Practical Nurses, which was appointed in February, 1965, under the *Practical Nurses Act*. The Health Branch's Director of Administration is the Chairman of the Council, whose members were nominated by the following:—

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

The principal objective of the programme is the maintenance of good patient care.

The principal responsibilities of the Council are
—licensing of qualified practical nurses.
—approval of training-schools.

The major groups to whom Council may issue licences are
—those who have completed an approved course of training.
—those who have been satisfactorily employed, in the opinion of Council, in the work of practical nursing in British Columbia for at least two years within the last five years. (Persons in this second group must apply before the end of December, 1966.)

The regulations were amended in July, 1966. A significant change was the amendment to provide for the granting of partial licences to applicants in the second group above whose experience has been limited to fields such as pædiatric nursing, obstetrical nursing, medical and surgical nursing, etc.

During 1966 there were six formal meetings of the Council as a whole as well as numerous meetings of sub-committees. Although each Council meeting dealt with many matters of administration and programme planning, the main business was always the consideration of applications (previously assessed by the Committee on Credentials). By the end of the year, slightly more than 1,000 licences had been issued.

VITAL STATISTICS

On August 31, 1966, the Division of Vital Statistics concluded its 94th consecutive year of registration of births, deaths, and marriages. Although the period falls six years short of a century, it is appropriate in this year of Centennial celebrations to note that the legislators of the Province in those days were concerned about the need for a system for accounting for human life.

The Act of 1872, *Respecting Registration of Births, Deaths and Marriages,* did not apply to Indians, who numbered over 25,000 out of the Province's population of about 36,000. Registration of Indian events did not begin until 1916. In 1872 about 200 births were registered, as compared with nearly 33,000 in 1966.

Progress toward obtaining complete registration of vital events was slow, for reasons which were well summarized in the Registrar-General's report of 1872 to 1873, as follows:—

" There are many obstacles in the way of obtaining complete returns, chiefly arising from the great distance from registry offices at which a large proportion of the population reside; the want of cheap and speedy means of communications; the migratory habits of the people of the mining districts; and the difficulty of disseminating over a territory so vast and so sparsely settled as that covered by the registration districts, information of the provisions and requirements of the Act."

The number of registration districts increased gradually from 9 in 1872 to 73 at the present day. From 1872 to 1911 the Act was administered by the Registrar-General, who was also Registrar-General of Titles. A separate Registrar of Births, Deaths, and Marriages was appointed in 1911.

The Act of 1872 was revised twice before being replaced in 1913 by legislation in which the short title *Vital Statistics Act* appeared for the first time. Extensive revisions were made in 1924 and 1933, and in 1962 the Act was completely rewritten on the basis of a model Act prepared for the guidance of all Provinces.

In 1872 between 25 and 30 per cent of all births were registered. An amendment to the Act in 1897, making filing of notice of birth compulsory, brought considerable improvement, and the corresponding proportion at the present is probably 99.9 per cent. The transformation from a hopelessly incomplete registration system to the present system of virtually 100 per cent registration of vital events is the result of increased efficiency in the organization and administration of the registration system on the one hand, and on the other the willingness of the general public to submit to the legal requirements. Other factors have been the vast improvement in transportation and in hospital facilities, an increase and better location of district offices, the development of checks and safeguards against omission of registrations, and the increasing demands for certification of vital events imposed upon the individual by a complex society.

Today the two main functions of the Division are registration services and statistical services, and both of these continued in rising volume of activity during 1966.

REGISTRATION SERVICES

Vital Statistics Act

This Act governs the registration of births, stillbirths, marriages, deaths, adoptions, and divorces, and the issuance of information and certificates based on registrations filed. The year was notable again for the excellent co-operation received from all sources involved in any aspect of vital statistics registration.

Marriage Act

This encompasses matters relating to the solemnization of marriage and the legal preliminaries thereto. The chief function of the Division under this Act relates to the issuance of marriage licences, performance of civil marriages, and the licensing of clergymen with authority to solemnize marriage in British Columbia. In 1966 there were 2,321 clergymen representing 152 religious bodies authorized to solemnize marriages. There were 14,500 marriages registered, an increase of 1,220 over the previous year.

Change of Name Act

The number of legal changes of name effected under this Act was 650, a marked increase of 131 over the previous year.

Wills Act

The Registry of Wills Notices maintained by the Division under the *Wills Act* was busier in 1966, there being a substantial increase to 13,300 registrations from the 1965 figure of 11,200.

Volume of Registration and Certification

The total volume of registration in 1966 was about 2 per cent higher than in 1965, largely as a result of an increase of some 20 per cent in registration of wills notices. The number of delayed registrations of birth rose sharply due to the lowering of the age limit for Old Age Security and the introduction of the British Columbia Medical Plan. While the numbers of such registrations are small in comparison with the total, they involve a disproportionate amount of investigation and correspondence.

The number of certificates issued declined slightly (1 per cent) in 1966, while revenue increased by a similar proportion.

STATISTICAL SERVICES

Tuberculosis Control.—In addition to the regular annual preparation of statistics for the Division of Tuberculosis Control, assistance was given in connection with a study of tuberculosis in Indian children, and in a study of lung cancer in the Province.

During the year the Division took over from the British Columbia Tuberculosis Society the punching of cards in connection with tuberculin testing surveys.

The punch-card file of known tuberculosis cases was made more useful by removing from the file cases lacking evidence of investigation and treatment for several years. These will in future be recorded in a separate file. In addition, a punch-card file of known active cases, and of reported contacts to these cases, was set up during the year.

The Division prepared special data for the International Tuberculosis Surveillance Research Study, a study designed to investigate tuberculosis in various countries of the world.

Venereal Disease Control.—Revised recording procedures were instituted at the beginning of the year and are proving satisfactory. Changes in annual statistics, to increase their value in venereal disease control, were discussed and agreed upon with the Division of Venereal Disease Control.

Cancer Control.—During the year the records of cancer notifications maintained in the Division were transferred from the head office in Victoria to the Divi-

sion's Vancouver office. It is anticipated that improved reporting will result, and that these records will form the basis of a cancer register, similar to the Registry of Handicapped Persons. Statistical services were provided to the British Columbia Cancer Institute and the cytology service of the Vancouver General Hospital as in previous years.

Health Units.—Assistance was given to the health officers of various health units in local projects they were undertaking. In addition, various aspects of the Division's work of interest to the health officers were the subject of fruitful discussions with them at their spring and fall council meetings.

Division of Epidemiology.—Members of the Research Section worked with the Director of Epidemiology in a study of the residual effects of rheumatic fever among the white and Indian population. The Section also participated in a study of pesticide residues in samples of human fat and human milk in two health units.

Public Health Nursing.—Assistance was given to the Division of Public Health Nursing in completing a patient progress study, and in carrying out a study of mental health nursing service.

Dental Health.—There was collaboration with the Division of Preventive Dentistry and the Director of Dental Services for Greater Victoria (School District No. 61) in completing another of the series of dental health surveys started several years ago. Plans were laid for a similar survey to be conducted in the Okanagan region in 1967. Final data were received during the year from a clinical study carried out by the Division of Preventive Dentistry to evaluate the effectiveness of a supervised programme of toothbrushing, using a fluoride phosphate solution; arrangements have been made to use the computer facilities of the Data Processing Division of the Department of Industrial Development, Trade, and Commerce to undertake the extensive statistical analysis involved in this study.

Natality Statistics.—During the year a special report was issued giving statistics of the "newborn," derived from the tabulations of data reported on Physician's Notices of Birth for the years 1961 to 1964. The interest of the medical profession in this study was revealed by the number of encouraging comments received.

Registry for Handicapped Children and Adults.—There was encouragement in the fact that the high level of registration reached in 1965 was surpassed during the year. Registrations now total 33,000, an increase of 4,000 over 1965.

Interest in the work of the registry was reflected in a number of requests received from research workers for information regarding specific defects, and in the number of visitors from other Provinces of Canada, the United States, Britain, and elsewhere.

Data Processing.—In addition to the operation of the Division's tabulation section of conventional I.B.M. equipment, service was obtained from the computer facilities of the Data Processing Division in completing various operations which would be onerous for ths Division's tabulation section.

In view of the arrangements made for the Data Processing Division to acquire a 360 I.B.M. system which will be available to other departments, a course of instruction in this system was attended by three members of the Research Section.

The following figures represent estimated volume of registration and certification for the year 1966, compared with the figures for 1965:—

	1966	1965
Registrations accepted—		
Birth registrations	32,800	33,829
Death registrations	14,400	15,503
Marriage registrations	14,500	13,335
Stillbirth registrations	410	442
Adoption orders	2,000	2,167
Divorce orders	2,200	2,006
Delayed registrations of birth	650	424
Wills notices	13,300	11,188
	80,260	78,894
Changes of name under *Change of Name Act*	650	519
Legitimations of birth	200	176
Alterations of given name	240	243
Certificates issued—		
Birth certificates	58,500	54,663
Death certificates	9,800	9,174
Marriage certificates	5,800	5,891
Baptismal certificates	14	12
Change of name certificates	790	763
Divorce certificates	280	322
Photographic copies of registrations	6,100	10,074
	81,284	80,899
Searches of wills notices	9,150	8,716
Non-revenue searches for Government departments	11,200	11,904
Central Office revenue	$105,700	$102,913

PUBLIC HEALTH EDUCATION

The objective of this Division is to provide an educational consultative service to local health personnel and to other Divisions within the Health Branch.

In addition to routine divisional operations, the three main areas of work were in general consultation, school health education, and audio-visual services. The Division was represented by the following staff: The Director, a consultant in general health education, a consultant in school health education, and a consultant in audio-visual services.

The activities of the Division in these three service areas are reported hereunder.

GENERAL CONSULTATIVE SERVICE

Guidance and assistance with materials and organization have been given three health units in conducting workshops on staff communication.

One health unit was given help with the educational aspects of its poison-control programme.

Assistance was given to our sanitation service in co-operation with the Department of Education, in planning and organizing a food-handlers' training course to be held at the British Columbia Vocational Institute at Burnaby. The material will subsequently be used by public health inspectors for food-handlers' training classes throughout the Province.

An additional 133 volumes were acquired for the main Health Branch library.

Twelve additional books each were provided for the local libraries established in the health units in 1949.

The Director was an active member of the Public Health Institute Planning Committee, which involved extensive assistance to the Bureau of Local Health Services in planning the 1966 institute held at the University of British Columbia. With a larger attendance and more sectional meetings than at any previous institute, the organizational work involved placed a heavy load on the Division.

The in-service-education staff newsletter, "News and Views," was published monthly throughout the year.

An initial liaison was established with the British Columbia Tuberculosis and Chest Disabled Veterans' Association in a proposed anti-smoking programme directed toward adults. The Division co-ordinated its efforts with the British Columbia regional office of the Food and Drug Directorate of the Department of National Health and Welfare in planning for the most effective use of its new information kit, "Drugs and You."

With the permission of the Manitoba Department of Health, its pamphlet on infectious hepatitis was adapted for our use and was subsequently produced and distributed throughout the Province.

At the request of the Division of Public Health Nursing, a full-colour leaflet on after-care of smallpox vaccinations was produced and made available for distribution. This involved our own photography for use in the colour separation work involved in the printing.

Several health units requested assistance from the Division in the layout and design of their annual reports. These covers were planned so that they could be run off on the recently acquired high-speed two-colour multilith machine.

The provision of funds on a matching basis to local health units was continued. These moneys were used in the production of pamphlets of specific local interest, a special conference on dental health, and various photographs and several items

of photographic equipment which were used to increase community awareness of public health activities.

Also continued was an allocation of a portion of the health education budget to enable local health units to secure additional educational materials at their own discretion. The units used these funds for the purchase of numerous library books, for additional journals, and for reference material.

The Division was again responsible for the planning and carrying-out of arrangements for the orientation of new senior staff members. In a similar manner, suitable schedules and itineraries for visiting public health officials were prepared and put into effect.

The Division was responsible for co-ordinating the efforts of the Safety Division of the British Columbia Civil Service Commission in promoting a safe-driving programme among health unit personnel. The filmstrip series " Seeing Habits for Expert Drivers " was used for this purpose.

AUDIO-VISUAL SERVICES

The Health Branch film and filmstrip library holdings increased by 267 films and 10 filmstrips. The total library holdings are now 1,227 films and filmstrips.

Continuing the trend of the past several years, there was an increase of 10 per cent in confirmed bookings by the Health Branch film library.

As is the case with all similar film libraries, a number of our titles have reached the stage where they may be considered as " dated," and 11 were deleted. All new productions in the health and public health field are scrutinized closely, and during the year 52 new films were previewed; 19 were purchased and added to the library.

In an effort to overcome the increasing problem of serving schools with recommended health films, and supplying the needs of the health unit prenatal classes, local film libraries (six films) were established in each health unit. It is planned that these films will be cleaned and serviced at regular intervals in Victoria.

To meet a need for effective display material in the health units, five large portable displays, for use on a regional basis, were designed and the construction supervised. These displays include a continuous slide projector and use 80 coloured slides depicting the various services provided by the local health unit. The slides were prepared by this Division.

An important need was filled in the provision of tape recorders to all health unit main offices. These machines are being increasingly used in staff in-service education programmes.

Another gap in the availability of audio-visual equipment was filled when combination 35-mm. slide and filmstrip projectors were supplied to all offices in the field. Workshops were conducted in several health unit areas on the effective use of these machines, as well as film projectors; the care of films and the use and maintenance of recently acquired equipment were also dealt with.

A number of photographic assignments were completed. These included preparation of a series of slides for prenatal classes at the request of the Division of Public Health Nursing; preparation of slides on industrial ventilation at the request of the Division of Public Health Engineering; making a set of black-and-white and colour photographs of the new transportable dental equipment at the request of the Division of Preventive Dentistry; and adding to the Division's collection of large colour photographs of the new health centres for inclusion in the proposed modifications to the permanent Departmental exhibit in the Government Building at the Pacific National Exhibition.

Additional photographic equipment was acquired during the year to enable the Division to increase its holdings and improve the quality of slides and photographs for use by other divisions and local health services.

SCHOOL HEALTH EDUCATION

In this extensive area of public health activity there has been continued liaison with the Department of Education, the Faculties of Education of the three universities, and with the Steering Committee on Curriculum Development to the Department of Education; the last named is composed of representatives from the British Columbia Division of the Canadian Medical Association, the three universities, the British Columbia Teachers' Federation, the Health Branch, and the Department of Education.

Considerable work has been done on the preparation and production of teaching units; following assessment by teachers in the Powell River School District, four units were completely revised; these were " Breathing " (which includes smoking), " Food," " Teeth," and " Body Mechanics," The revised units are being used again by the same school district. In addition, the unit on " Breathing " is being used in the Burnaby School District and an adaptation of it is being used in the Vancouver School District. A final report of teacher opinion on the value of these units is to be completed at the end of this school-year and forwarded to the Department of Education for use by the recently formed Health Curriculum Revision Committee.

Two new teaching units have been developed for secondary schools. These are "Alcohol " and " Smoking "; they are currently being tried on a limited basis.

A course in health-teaching methods was prepared and given to over 60 first-year students in the Faculty of Education at the University of Victoria.

FINANCIAL REPORT

For the Period April 1, 1965, to March 31, 1966

The comparison table shown at the end of this report, Public Health Services Gross Expenditure for the Fiscal Years 1963/64 to 1965/66, shows an expenditure of $10,735,487 for the fiscal year 1965/66.

This report for the first time carries the expenditure heading " patient care," and for comparison purposes related figures have been shown for the two previous fiscal years. Included in the heading " patient care " are: (*a*) administration; (*b*) tuberculosis control, including out-patient and in-patient services provided from the Willow Chest Centre and Pearson Hospital; (*c*) extended care provided in Pearson Hospital; and (*d*) the care which is provided by the Poliomyelitis Pavilion of the Pearson Hospital. The *per diem* rates for in-patient care during the fiscal period April 1, 1965, to March 31, 1966, are as follows:—

Tuberculosis Hospitals

Operating cost—		
Willow Chest Centre	$628,940	
Pearson tuberculosis unit	461,527	
Combined operating cost		$1,090,467
Number of patient-days—		
Willow Chest Centre	29,218	
Pearson tuberculosis unit	25,181	
Total number of days care		54,399
Per capita cost *per diem*—		
Willow Chest Centre		$21.53
Pearson tuberculosis unit		$18.33
Combined *per capita* cost *per diem*		$20.05

Extended Care

Operating cost—		
Pearson extended-care unit	$786,044	
Mount St. Mary	56,458	
Combined operating cost		$842,502
Number of patient-days—		
Pearson extended-care unit	42,298	
Mount St. Mary	7,696	
Total number of days care		49,994
Per capita cost *per diem*—		
Pearson extended-care unit		$18.58
Mount St. Mary		$7.34
Combined *per capita* cost *per diem*		$16.85

Poliomyelitis Pavilion

Operating cost	$364,627
Number of patient-days	12,649
Per capita cost *per diem*	$28.83

Local Health Services continue to use the largest percentage of the Health Branch budget, with an increase in expenditure over the previous fiscal year of $458,836, making a total expenditure of $4,086,237 to meet the expanding health services and needs at the local level.

The section " cancer, arthritis, rehabilitation, research, etc." has increased in expenditure by 17.3 per cent over the fiscal period 1964/65, or $290,349. The increase is largely due to increased grants to public health research, which was increased by $234,614. Additional grants were provided to the British Columbia Cancer Foundation and other voluntary agencies.

The sections " General Administration and Consultative Services," " Division of Laboratories," " Division of Vital Statistics," and " Division of Venereal Disease Control " show increases in expenditure which reflect general salary revision and additional staff.

The Mechanical Superintendent and his assistant continue to personally inspect all vehicles operated by the Public Health Services on Vancouver Island and the Lower Mainland. The Public Health vehicles used elsewhere in the Province are inspected at least twice yearly by the garage personnel of the Department of Highways. This arrangement has proved very economical and helpful to the Public Health Services.

Comparison Table of Public Health Services Gross Expenditure for the Fiscal Years 1963/64 to 1965/66

Service	Gross Expenditure			Percentage of Gross Expenditure		
	1963/64	1964/65	1965/66	1963/64	1964/65	1965/66[1]
Patient care	$2,488,807	$2,374,088	$2,992,005	28.1	25.8	27.9
Local Health Services	3,397,911	3,627,401	4,086,237	38.4	39.4	38.1
Cancer, arthritis, rehabilitation, research, etc.	1,555,792	1,676,826	1,967,175	17.6	18.2	18.3
General administration and consultative services	486,161	517,071	578,014	5.5	5.6	5.4
Division of Laboratories	465,094	494,915	568,837	5.3	5.4	5.3
Division of Vital Statistics	338,471	379,076	392,311	3.8	4.1	3.7
Division of Venereal Disease Control	109,736	126,389	150,908	1.2	1.4	1.4
Totals	$8,841,972	$9,195,766	$10,735,487	100.0	100.0	100.0

[1] Percentages may not add to 100 due to rounding.

LOCAL HEALTH SERVICES

PATTERNS OF DISEASE

No serious outbreaks of communicable diseases were reported. Gonorrhœa (mentioned in more detail elsewhere) continued to be the most troublesome condition, although here were signs that even this disease was responding to the intensive control measures being taken.

No DIPHTHERIA has been reported for the past three years; this contrasts sharply with the situation in some eastern Provinces where a number of children are still infected each year.

DYSENTERY remains a troublesome problem with some 570 cases reported, an increase over 1965. This disease is not particularly serious to healthy adults but can be fatal to infants and elderly debilitated patients.

FOOD POISONING again took its toll. Over 350 people were reported as being poisoned by eating food later found to be infected with disease-producing bacteria. Constant education of food-handlers and rigid enforcement of regulations are our main avenues of control.

The continent-wide epidemic of INFECTIOUS HEPATITIS that was responsible for thousands of cases of this disease two or three years ago appears for the moment to have run its course both in this Province and elsewhere. Only 834 cases were reported this year in contrast to almost 1,900 in 1962. A new generation of susceptible children will have to appear before hepatitis is likely to become widespread again.

We can again report a year with no case of PARALYTIC POLIOMYELITIS. Only one case has been reported during the past four years. This compares most favourably with the situation a few years ago when large numbers of children and adults were afflicted annually. For this we can thank the widespread use of poliomyelitis vaccine, which has been offered at public expense to everyone in the Province for the past 10 years.

STREPTOCOCCAL INFECTIONS causing scarlet fever and other severe diseases seem to be increasing again. There were nearly 1,800 cases, compared with under 1,000 two years ago. Fortunately the streptococcus is still sensitive to commonly used antibiotics, and so infection can be effectively treated if recognized in time. One troublesome complication is rheumatic fever (referred to below).

There were three cases of TYPHOID FEVER, below the average for the past five years. The disease is apparently spread by elderly people who had typhoid fever many years ago and have now become chronic carriers. Milk and water, which used to be common vehicles, are now seldom implicated.

Eleven cases of MENINGOCOCCAL (SPINAL) MENINGITIS were reported, which is somewhat less than the average of the past few years. A disturbing trend, however, is the appearance of strains of meningococci which are resistant to the antibiotics which have been used against them with good success up to this point.

An outbreak of Types A and B INFLUENZA began early in the year in the more densely populated portion of the Lower Mainland, and in the space of a few weeks spread to Vancouver Island and the Interior of the Province. Five healthy young children died as a result of this condition, as did a large number of elderly people whose resistance was lowered from many other chronic conditions.

The RHEUMATIC FEVER prophylaxis programme expanded, and at the close of the year 1,360 children were receiving regular prophylaxis. Success depends greatly on the regularity with which the prophylactic penicillin is taken.

An interesting study was carried out during the year in one health unit and showed that on the average about 20 per cent of the children were not taking their medicine regularly. A plan has now been worked out for monitoring the situation in all health units so as to maintain the regularity with which the prophylactic drugs supplied are taken. During the year a complete revision of the basic information being assembled for research purposes from the children on the programme was carried out.

In the POISON CONTROL programme, funds were secured through a National Health Grant to produce a new set of product information cards, and the Faculty of Pharmacy, University of British Columbia, has been assembling the information that is to be printed. These cards will be offered to British Columbia hospitals along with other reference material for the assistance of medical staffs in their treatment of people who have accidentally swallowed a poisonous substance. Plans have been made for a Provincial poison-control reference centre to be incorporated into the proposed drug information centre in the new Health Sciences Building, University of British Columbia. The Director of the Simon Fraser Health Unit has undertaken to develop an effective educational programme aimed at the mothers of pre-school children. It should be noted that over 2,000 people in British Columbia annually swallow one toxic substance or another, and each year a number of deaths result.

In DENTAL HEALTH, children continued to be our main concern. A surver in Greater Victoria indicated an over-all improvement in the dental health of children between 7 and 15 years. The percentage of children having "no caries defects" was 37.3, significantly higher than the 25.7 per cent recorded in a 1960 survey. However, there is still room for improvement; a large proportion of these children showed inflammation of the gum (probably leading to pyorrhœa later) and almost 30 per cent urgently needed orthodontic treatment (straightening of the teeth). Further details concerning dental health appear in a later section under "Preventive Dental Services."

The public health nurse continues to play an important role in the control of communicable diseases. During the year in the TUBERCULOSIS CONTROL programme 21,094 tuberculin tests were carried out and 13,229 home visits were made to tuberculosis patients and their contacts. This is double the number of visits to patients compared with last year.

The VENEREAL DISEASE rate varies through the Province, with the higher incidence centred in the northern and Interior health units. A public health nurse advisor was seconded to the Division of Venereal Disease Control for a year's service in the five health units concerned to analyse and evaluate the programmes and streamline methods of investigation, treatment, and follow-up. Public health nurses in the health units provided 5,559 services on behalf of patients with venereal disease.

Other statistics involving the public health nurse are

—6,386 prophylactic injections for protection against hepatitis, rubella, and rubeola.

—4,477 home visits made for investigation and follow-up.

—80,445 smallpox vaccinations for children and adults.

—166,323 persons received protection for poliomyelitis by Sabin vaccination while 24,009 completed the basic series protecting against poliomyelitis, diphtheria, and tetanus.

—132,711 reinforcing doses and individual injections.

—385,875 individual treatments in all, given to protect against communicable disease.

Disposable syringes and needles for injections were introduced throughout the health units to ensure the safest possible techniques for protection of the public.

ADMINISTRATIVE CONSIDERATIONS

The health centres at Vernon and Chilliwack were enlarged to house facilities for mental health personnel. Modifications and improvements were made to the health centre in Kelowna, and new health centres were built at Fruitvale and Hope. In addition, plans for a large public health-mental health facility are nearing completion in Kamloops. There is planning for extensions at Penticton, Quesnel, and Williams Lake, and for new health centres at Osoyoos, Ladner, and Cowichan Lake. New buildings at Cranbrook and Fort St. John are in the discussion stage.

Public health nurses, through agreement with the Department of National Health and Welfare (Medical Services Directorate), continue to provide service to 35 per cent of the Indians living on reserves. Service was extended to about 860 Indians on the reserves of Cheslatta, Topley Landing, Decker Lake, Wyonne (all in the Northern Interior Health Unit), and to Canoe Creek reserve in the Cariboo Health Unit. Katzie reserve in the Central Fraser Valley Health Unit, and Shell Beach and Chemainus Bay in the Central Vancouver Island Health Unit area. The numbers of Indians living off reserve continue to increase, and health unit staffs are now providing public health nursing service to approximately 55 per cent of the total Indian population.

Public health inspectors have been extending service to a number of Indian reserves, and they have been particularly active in educational programmes to promote improved sanitation.

The development of regional districts has involved continued discussion with Department of Municipal Affairs personnel at the central level, and Medical Health Officers have held discussions with regard to programmes and services with board representatives at the local level. This development is viewed with considerable interest by health unit staffs since it appears to offer some opportunity for exercising a degree of control in such areas as land utilization, garbage disposal, planning, etc., in unorganized territory. In addition, it could provide an instrument for interdepartmental communication and finally a method whereby moneys could be raised to improve conditions in an area as opposed to individual communities or small districts formed under the *Local Services Act*. Certainly we are anxious to work in close conjunction with these regional boards and are pleased that the local health officer will be appointed as a member of the Technical Planning Committee.

Population increase and industrial expansion have resulted in a need for increased co-operation and communication between the various departments of government and agencies providing service. This in turn has led to interdepartmental discussion with Hospital Insurance, Mental Health, and Social Welfare personnel in attempts to identify patient needs and plan ways in which these can be met in terms of facilities and trained personnel at the community level. Health Branch staff have assumed responsibility in connection with factory inspections, pollution control, service to the mentally ill, the aged, and those living in boarding homes. This has required a tremendous amount of co-operative planning. It will be of vital importance in the future that we continue to work together along the lines already developed. Sanitation standards for sewage and garbage disposal, campgrounds, mobile homes, swimming-pools, and subdivisions have been developed. A revision

of the *Health Act* is under way, and a draft regulation for control of air pollution has been developed.

In conjunction with the Department of Education, planning toward a revision of the health education curriculum in schools and the up-grading of teacher-training in health in the Faculties of Education at the three universities has continued. Toward year's end, the Department of Education formally established a curriculum revision committee.

Medical health officers and public health inspectors were appointed Factory Inspectors by the Deputy Minister of Labour. The term " factory " refers to any establishment wherein 10 or more persons are employed. The Factories Branch of the Department of Labour, with a small Vancouver-based staff, was unable to cope with the many factories throughout the Province. It seemed a natural progression of a public health programme to assign these duties to local health unit staffs, whose public health inspectors were already attuned to this type of work. Inspections are already under way in most health units.

A survey of clerical needs in the local health centre offices brought forward recommendations that resulted in additional staff being appointed to many of the main offices. Activity in mental health, speech therapy, sanitation, and tuberculosis programmes, as well as a general increase in public awareness of the services provided by the community health centre, had resulted in a demand for clerical services which the clerks were unable to meet, and situations frequently arose when too much professional time was being consumed in clerical tasks.

PERSONNEL

Among central office staff, the Nutrition Service has experienced a year of reorganization. On January 1, 1966, the former Nutrition Consultant became Dietetic Consultant to the British Columbia Hospital Insurance Service, and we were fortunate to obtain a well-qualified nutritionist to fill this vacancy by early fall. The position of engineering assistant was filled by a senior public health inspector from the field staff. Changes in the employment of medical health officers occurred in five health units. At year's end, vacancies exist in the position of assistant director in two health units. Three physicians were recruited to fill vacancies during the year, and two additional physicians presently on staff succeeded in obtaining their certification in public health.

Eighteen additional full-time public health nursing positions were added to help meet the needs of special health programmes and population growth. Twelve of these were subsidized by National Health Grant funds. Needs of the home care service led to staff increases in public health nurses at four centres and in consultant physiotherapist positions in three health units.

With continued expansion in the economy, the role of the public health inspector is changing as newer responsibilities are accepted in such fields as subdivision inspection, factory inspection, and pollution control. In March of this year a course in public health chemistry and bacteriology was held for public health inspector trainees. Following completion of their training, three trainees were appointed to public health inspector positions. Four new trainees were recruited. New positions were established at Port Hardy and Vanderhoof.

A two-year course for public health inspectors at the British Columbia Institute of Technology is to commence in 1967. This will undoubtedly improve the supply of available inspectors and also add considerably to their technical knowledge and ability to cope with the ever-increasing complexity of the problems they meet.

It is still difficult to obtain a full complement of nurses trained in public health. Because of this problem in EDUCATION and TRAINING, it is necessary to employ 15 registered nurses as public health nursing trainees to fill vacancies. Some 89 per cent of all public health nurses are fully qualified, while approximately 18 per cent in addition have a degree in nursing. During the year, seven were granted National Health Grant bursaries to enrol in public health nursing university programmes. Ten returned from similar programmes. Mental health activities are a growing part of the work of the public health nurse, and the special psychiatric nursing affiliation course for public health nurses provided by the Mental Health Services at Riverview Hospital was continued. Fifteen public health nurses lacking clinical experience benefited from this eight-week course. When the course began in 1963, about 55 per cent of the public health nurses needed the training; now the percentage has dropped to about 33 per cent. Mental Health Services also arranged with The Woodlands School for four one-week workshops on the care of retarded children, and 35 public health nurses from various health units participated. A large number of public health nurses have enrolled in a special correspondence course provided by the Department of Continuing Medical Education at the University of British Columbia and sponsored by the Public Health Nursing Council. One of our public health nurses was selected as co-ordinator of a series of two-day institutes on "Meeting the Nursing Needs of the Elderly," sponsored by the Registered Nurses' Association of British Columbia and covering the whole Province. The Nutrition Consultant has also been heavily involved in this course. Most of the public health nurses attended the course when it was held in their local area. Two senior public health nurses returned from university courses in supervision and administration, and one supervisor is presently on course at the University of Toronto. The health units provided four-week programmes in basic public health nursing for 33 public health nursing students completing the diploma course at the University of British Columbia and five from the University of Alberta. In addition, 153 undergraduate nurses from six schools of nursing in the Province had one week of observation in a health centre.

Late in the year all the medical health officers and nursing supervisors from the Provincial health units together with senior staff from the two metropolitan health departments of Vancouver and Victoria and from the Medical Services Directorate attended a one-week multi-discipline course in administration conducted by Dr. Ruth Freeman, Professor of Administration at Johns Hopkins University, Baltimore.

Three health unit directors attended a hospital hygiene and infection-control course in Seattle, and two others a refresher course for medical health officers at the School of Hygiene, University of Toronto. In Emergency Health Services, several members of the Health Branch staff attended training courses at the Canadian Emergency Measures College in Arnprior, Ont. Combination public demonstrations and exercises of the advanced treatment centre were held in Kitimat and Prince George, and the Prince George hospital disaster plan was exercised, using mock casualties.

During the year it was possible to recruit to full strength the establishment of five regional dental consultants, all of whom have now received appropriate postgraduate education.

Among the engineering staff there were opportunities to attend a few short courses involving pollution control in both water and air. One engineer was granted leave of absence in order to attend the University of Washington, Seattle, to obtain his master's degree in sanitary engineering.

SERVICES AND PROGRAMMES

Public Health Nursing

Although no new programmes were introduced this year, a number of services have been receiving more attention.

CLASSES FOR EXPECTANT PARENTS were conducted in 66 of the larger population centres. They were revised and modified during the year, being reduced from eight to four or five classes per series. Attendance was about the same as last year, despite the falling birth rate. During the year 2,115 new mothers and 568 fathers attended 2,999 classes. In addition, there were nursing visits at home to 3,830 expectant mothers.

In INFANT and PRE-SCHOOL health, more emphasis has been directed toward routine screening for defects, particularly hearing and vision. In most areas a routine hearing test was given the 6-month-old infant at child health conferences. There was more attention to assessing the 3-year-old child with a view to assisting parents in the correction of physical or emotional problems which may become apparent about this time. Routine health services were provided to 259 kindergartens in an attempt to have the child's health at optimum level by the time he enters Grade I.

At CHILD HEALTH CONFERENCES 13,719 infants and 7,856 pre-school children were enrolled and public health nurses had 56,349 interviews with parents concerning infants and 95,917 pre-school children. It is very gratifying to note a 43-per-cent increase in pre-school attendance at these conferences. In addition, public health nurses made 36,703 home visits to 18,147 infants and 33,658 home visits on behalf of pre-school children.

In the SCHOOL HEALTH PROGRAMME, emphasis continued on identification of pupils having special problems and the channelling of community health services to those in need of assistance. Identification of these children was accomplished through family records, teacher-nurse conferences, school liaison committees, and vision- and hearing-screening tests. Health information was provided by nurses to teachers, and there was classroom health teaching by teachers, in subjects such as family living, menstrual hygiene, venereal disease, and other communicable diseases. During the year particular attention was directed toward an analysis of the secondary-school service to be sure that public health nurses were working as closely as possible with school principals, counsellors, and teachers. Nurses provided 273,826 individual services in the school, such as vision or hearing checks, examination of pupils, etc. Teacher-nurse conferences were held concerning 6,251 classrooms, and there were 568 meetings with members of the school faculty. The over-all volume of this work in the schools was about the same as last year.

The following tables show important aspects of the school health services from a statistical point of view:—

Table I.—Enrolment by Grades in Public Schools, June, 1966

	Greater Vancouver	Greater Victoria	Remainder of Province	Total
Kindergarten	6,703	1,813	4,564	13,080
Grade I	12,830	3,466	26,172	42,468
Grade II	11,908	3,353	23,895	39,156
Grade III	11,569	3,099	22,955	37,623
Grade IV	11,147	3,106	22,094	36,347
Grade V	10,863	3,107	21,327	35,297
Grade VI	10,812	3,006	20,880	34,698
Grade VII	10,736	2,927	19,712	33,375
Grade VIII	10,525	2,705	18,987	32,217
Grade IX	9,976	2,795	17,357	30,128
Grade X	9,412	2,549	15,550	27,511
Grade XI	8,627	2,274	12,808	23,709
Grade XII	7,947	2,105	10,850	20,902
Grade XIII	617	60	1,867	2,544
Special or occupational	3,906	1,006	6,623	11,535
Totals	137,561	37,371	245,858	420,790

A breakdown by grades is available for public schools only. In addition to the above, 23,000 pupils were enrolled in private schools. Although the decrease in enrolment is fairly gradual from one grade to the next, a greater reduction occurs after Grade IX, and the Grade XII enrolment is approximately half that of Grade I. The Grade XIII enrolment has dropped sharply this year, particularly in the Vancouver area.

Table II.—Total Number of Schools, Public and Private, and Enrolment by Type of School, June, 1966

Type of School	Greater Vancouver		Greater Victoria		Remainder of Province	
	Number of Schools	Enrolment	Number of Schools	Enrolment	Number of Schools	Enrolment
Grade schools—						
Public	236	137,561	87	37,371	1,074	245,858
Private	49	9,586	14	2,435	67	10,979
Kindergarten—						
Public	102	6,703	18	1,813	83	4,564
Private	126	4,878	26	789	96	3,237
Schools for retarded children—						
Public	3	288	2	77	10	308
Private	3	62	----	----------	32	396
Totals	519	159,078	147	42,485	1,362	265,342

The total enrolment for grade schools (public and private) is 443,790, an increase of about 40,000 from the previous year. A particularly rapid increase has occurred in enrolment of public kindergartens, which now have an enrolment of 13,080, 30.8 per cent of the Grade I enrolment. The number of public schools for retarded children has increased this year, with a resulting decrease in privately operated schools.

Certain other educational services by the Department of Education are of interest from the health standpoint. One hundred and thirteen emotionally disturbed children are enrolled in 14 classes, seven of which are in Greater Vancouver, three in Greater Victoria, and four in the rest of the Province. In Vancouver, 16 visually handicapped children are enrolled in two classes. Fifty-seven pupils are enrolled in classes for the hard of hearing, six in Greater Vancouver, one in Greater Victoria,

and one in Chilliwack. In addition, schools for the hard of hearing are operating in several centres under private auspices. Health unit personnel direct a concentration of health services toward the children in these special classes and work closely with the teacher and parents.

Table III.—Number of Pupils with Immunizations Up to Date on Entry to Grade I, September, 1965

Item	Greater Vancouver	Greater Victoria	Remainder of Province
Total pupils enrolled	13,547	3,714	26,796
Smallpox	7,423 (54.8%)	2,122 (57.1%)	15,185 (56.7%)
Diphtheria, pertussis, and tetanus	6,794 (50.2%)	2,199 (59.2%)	15,572 (58.2%)
Poliomyelitis	10,537 (77.8%)	2,922 (78.7%)	21,453 (80.1%)

These figures are essentially the same as last year. Poliomyelitis percentages are considerably higher than the others, but health unit personnel have pointed out that many children who are not counted as " up to date " for diphtheria, pertussis, tetanus, and smallpox require reinforcing immunization only, and this is given in Grade I.

Table IV.—Referral of Pupils to School Health Service

Item	Greater Vancouver	Greater Victoria	Remainder of Province
Number referred by school personnel	(1)	3,185	22,265
Number referred from other sources	(1)	2,409	13,808
Totals	.....	5,594	36,073

1 Figures are not available.

Approximately 13 per cent of school-children were referred to the school health service. School personnel referred 25,450 children, and 16,217 were referred by others or selected by the public health nurse through history or observation.

Table V.—Pupils Referred by School Health Service Personnel for Further Care

Item	Greater Vancouver	Greater Victoria	Remainder of Province
Investigation of vision defects	(1)	1,500	14,912
Private physician for other than vision defect	(1)	2,100	10,354
Speech therapist	(1)	121	898
Mental Health clinic	(1)	142	1,157
Other clinics	(1)	61	1,051
Totals	.....	3,924	28,372

1 Figures are not available.

In both Victoria and areas served by the Health Branch, referrals by health service personnel are made for approximately 10 per cent of the total enrolment. The 12,454 referrals to a physician are of interest, and indicate that although the school medical officer is examining relatively few children, a large number are receiving service from the family physician through the efforts of the public health nurse.

We continued to extend the HOME CARE PROGRAMME to new areas as eight new centres initiated home nursing service. The service is now provided from

56 health centres in 102 communities, and this includes 84.6 per cent of the population within the Provincial health unit areas. Rehabilitation nursing has continued to be emphasized, and two additional part-time consultant physiotherapists were employed. Ten of the health units had the advantage of a consultant physiotherapist from the home care programme, and this made a great contribution to the improvement in physical and mental rehabilitation of patients. A striking advance has been made in terms of homemaker services, which have increased and new ones are presently planned as a result of grants made available from the Social Welfare Department. The first " meals on wheels " in British Columbia to provide low-cost nutritious meals to shut-ins was started in the Greater Victoria area by the Saanich welfare department, and Selkirk Health Unit personnel are participating in a similar programme in Nelson. There was emphasis on improved liaison with hospitals, and public health nurses made more routine visits to general hospitals to arrange for continuity of care for patients discharged from hospital to the home care programme; 15 per cent of the patients discharged to the home care programme came directly from hospital. In all, 5,229 patients received 55,512 visits. Sixty-eight per cent of the patients were over 60 years of age, 25 per cent were 20 to 59 years, while the remaining 7 per cent were 0 to 19 years. It is estimated that there was a saving of 63,434 institutional days for these patients this year. Fifteen per cent would be for acute hospital care, 60 per cent for chronic or nursing-home care, and the remaining 24 per cent involved other types of institutions. Translated into financial saving, this would amount to about $657,000.

The public health nurse's work load in MENTAL HEALTH activities again increased sharply. A special study was undertaken during the year to obtain more detailed information. The study excluded the routine preventive aspects and concerned itself with patients receiving or being referred for psychiatric care. The preliminary report completed at the end of the first six months has provided information concerning the number of patients, type of public health nursing service provided, source of referral, and the time involved in providing service. It is interesting to note the importance of the public health nurse in case-finding: she accounted for no less than 40.1 per cent of the patients, while another 30.5 per cent were brought to her attention by co-workers such as teachers, counsellors, etc. Private psychiatrists and physicians referred 14.4 per cent of the patients, while mental health clinics referred 11.2 per cent, and 3.8 per cent came from a mental health institution. During the period reported upon, 8,495 visits were made on behalf of 3,003 patients. There has been a gradual increase in the numbers of patients in the older age-groups as school-age children have in the past accounted for almost all mental health patients. In this study 4.5 per cent were pre-school children, 67.3 per cent were from 6 to 18 years, and the remaining 24.2 per cent were adults.

Since the majority of patients in the home care programme are over 60 years of age, it is therefore closely associated with GERIATRIC care, which involves health supervision of the elderly at home, in private nursing homes, and in personal care institutions. In health units where consultant physiotherapists are employed, a senior public health nurse and the consultant physiotherapist have initiated " activation " programmes in a number of private nursing homes with a view to having the institutional staff eventually assume responsibility for them. In two health units a similar project has been instituted in personal care institutions. These are boarding homes for elderly persons, and many need more attention directed toward daily living activities and occupational and recreational therapy. Public health nurses now share in providing consultative nursing service in these personal care institu-

tions in all health units. In addition, two health units in the Fraser Valley have a pilot project under way to determine the role of the public health nurse in providing service to patients placed by the Mental Health Services Branch in personal care institutions. The public health nurses have made monthly visits, and preliminary reports indicate that this is a worth-while contribution. This service could not be given routinely, however, with the present staff. A number of health units are making plans for health counselling of elderly people, utilizing methods similar to those presently in effect in child health conferences. At year's end a pilot project was being developed in the Simon Fraser Health Unit for " multiple screening " of persons over 65 years of age. Such screening will be approved by the local medical society and will involve blood-pressure estimations, vision and hearing tests, blood tests, urinalysis, and chest X-rays. The purpose is to identify early in this age-group any incipient disease or illness so that it can be referred immediately to the private physician. Other helpful projects are being developed in many areas, all with the objective of assisting these elderly people to remain as active and independent members of our communities.

The public health nurses work with the FAMILY and its individual members to help them attain optimum health. They provided individual service to 42,087 adults over and above those shown under the specific services mentioned previously. During the year 154,919 homes were visited, 7 per cent more than last year, and in addition public health nurses provided specific service through 150,859 telephone calls. This also represents an 8-per-cent increase.

Public Health Engineering

Additional staff enabled this Division to provide a much more effective service, particularly since each new member had had considerable experience in the field of public health prior to joining the staff. Primary functions of this Division are to review plans and specifications for all public waterworks and sewerage systems in accordance with the *Health Act* and to act as consultants to the Provincial health unit staffs in matters of environmental sanitation. The table below illustrates the increased activity over the past 10 years relative to waterworks and sewerage-works submissions. Consultation with field staff involves private sewage disposal, industrial waste problems, watershed control, water-quality studies, garbage disposal, subdivision approvals, and fluoridation. The Division continues to review all applications for Pollution-control Board permits. While it may be desirable to have an engineer visit the site of a proposed new waste discharge, this is not always possible, and a report from the local health unit is frequently used as a basis of recommendations to the Pollution-control Board with respect to the health aspects of the application. Field staff are in a position to advise the Pollution-control Board of any instance in which the Board has an interest and are able to collect samples as required. The Director of the Division continues to represent the Health Branch on the Pollution-control Board itself. Progress is being made in having municipalities chlorinate water supplies considered to be potential hazards to the public health. Similarly, wherever a discharge of sewage presents a threat, disinfection is required as part of the treatment. Watershed areas are becoming more frequently a problem because of the expansion of mining and logging operations, but attempts to control these activities in watersheds have met with only limited successs.

In CONSULTATIVE SERVICES, every effort is being made to improve the performance of all waterworks and sewerage systems in the Province. Best results are achieved by working with the operators of these systems. They are visited at the site of their operations, where they are given advice, instruction, and assistance

Record of Approvals, 1957 to 1966

Year	Waterworks			Sewerage-works		
	Provisional	Final	Acknowledged[1]	Provisional	Final	Acknowledged[1]
1957	5	47	.....	5	67	.....
1958	11	62	.....	10	44	.....
1959	11	67	.....	13	51	.....
1960	8	52	.....	7	60	.....
1961	11	40	.....	18	89	.....
1962	10	45	.....	15	90	.....
1963	7	64	.....	21	92	.....
1964	28	81	.....	27	99	.....
1965	30	104	1	25	104	.....
1966	8	115	16	17	125	2

[1] The *Health Act* requires that plans and specifications for waterworks and sewerage-works be submitted for approval by the Minister prior to construction of the works. In some instances, construction proceeds without approval, and in order to cover that portion of a system an acknowledgment is given for the work if it has been designed and installed in accordance with basic requirements of public health engineering.

with their problems. The Assistant Director took a very active part in the British Columbia Water and Waste School, held at the University of British Columbia in the spring. As co-ordinator of the school, he was able to focus attention on the public health aspects of these services and to establish a satisfactory relationship between the Division's members and the operators in attendance.

Efforts are being made to ensure the efficient operation of sewage-treatment plants throughout the Province. The staff engineering technician has been trained and is now able to assist sewage-plant operators who are experiencing difficulties with their equipment.

Various projects have been undertaken during the year. The Okanagan Lake System Water Quality Survey entered its second year of a three-year programme. The present programme covers 21 sampling-stations, sampled once per month by our public health inspectors for chemical analysis. This programme will be expanded to include a biological study in 1967. There has been no attempt to draw any conclusion from the sample results collected to date.

With the growth of the lumber industry, the public has accepted with mixed feelings the smoke resulting from waste-wood burning. Air pollutants from this industry and others have gradually built up to objectionable levels of concentration in some of the larger centres of the Province. The Division purchased air-sampling equipment with National Health Grants, and in co-operation with the Division of Laboratories has undertaken two sampling programmes—one at Prince George and the other at Nelson. Both have been time-consuming, but it is hoped that we can establish the present levels of air pollutants in these industrial areas, and that this background of information will avoid a serious condition from developing in these centres. Air-sampling programmes for other industrial centres of British Columbia are to be initiated when additional equipment and staff become available.

Shellfish Programme

The ban on the harvesting of butter clams for commercial purposes in the northern coastal areas of the Province remained in effect. This was the third year of the closure. Fears that the incidence of toxicity in clams would grow in Georgia Strait led to an increase in the sampling programme during the summer months. In this surveillance, only 12 per cent of the routine samples failed to meet the inter-

national standard of acceptability, compared with 25 per cent in 1964 and 36 per cent in 1965.

A comprehensive sampling programme of growing-waters and oyster-shell stock was commenced in March, 1965, encompassing the major growing areas in Provincial waters. An exhaustive review of the bacteriological results of this survey was prepared for presentation to the Pacific Coast Shellfish Committee. A summary of the information was referred to the Northwest Shellfish Sanitation Research and Planning Conference at Olympia, Wash., to assist that body in applying the results of recent research toward the establishment of bacteriological criteria. Conclusions from the bacteriological study have been reviewed with the Department of National Health and Welfare with a view to establishing an understanding between this Province and the United States Food and Drug Administration in the interpretation of quality standards in respect to oysters for export. The majority of the oyster-growers of the Province have adopted a progressive attitude, and this has been rewarded in part by announcement of a plan for a depuration study in British Columbia by the Canadian Fisheries Research Board in 1967.

As the result of a sanitary reconnaissance, the greater portion of the oyster-growing area in Sooke Harbour, restricted in 1965, was reclassified to the approved category for the taking of shellfish in February, 1966. Similarly, Barkley Sound was approved for the taking of clams for commercial purposes. Progress is also being made toward the reclassification of Georgia Strait for the harvesting of clams for commercial purposes. Ladysmith Harbour, restricted in 1964, is being reviewed following an extensive bacteriological study, the installation of a modern sewage-treatment plant by the City of Ladysmith, and the findings of a report by the United States Public Health Service on the British Columbia shellfish programme and laboratory procedures.

A problem occupying our attention has been that of defining the extent of man-made pollution in estuarine areas. This is becoming more complex, particularly as it may relate to shellfish contamination.

Nutrition

The Nutrition Consultant extended the number of avenues through which she promotes the practice of good eating habits and a better understanding of the contribution of food to health. She was also involved in nutrition activities in schools and other educational institutions and in community meal service for elderly and handicapped persons. To a limited extent she reached the general public directly in a service which sets out " food values for the food dollar." One of the Consultant's major activities has been lecturing on nutrition in a series of institutes, sponsored by the Registered Nurses' Association of British Columbia, on nursing needs of the elderly. The emphasis on community nutrition education programmes is to continue with a project of operational research, to aid in bridging the gap between nutrition knowledge available and the public's use of this knowledge.

Public Health Inspection

The Consultant in Public Health Inspection has been working closely with the British Columbia Campers' Association in preparing Standards for SUMMER CAMPS. Licences for camps, under the *Welfare Institutions Licensing Act,* are referred to the local medical health officer for approval before a licence is issued each year. It is hoped that the Standards will become regulations under the *Health Act* at an early date.

A major advance took place in the field of FACTORY INSPECTION. During the year the medical health officers and public health inspectors were, as mentioned earlier, appointed Factory Inspectors by the Deputy Minister of Labour.

Recently a new programme was introduced to ensure control of FLUORIDATION OF COMMUNITY WATER SUPPLIES. This involves the public health inspector in carrying out tests to determine the fluoride ion concentration of samples submitted by water-treatment plant operators, and this testing programme has improved the exact knowledge of fluoride levels.

Another major step was taken by participation in FOOD-HANDLER CLASSES, and one programme involved 400 stewards, cooks, waitresses, and other food-handlers on the British Columbia Government Ferries. In co-operation with the Department of Education, seminars for managers of food-handling establishments have been carried out in various parts of the Province. Other lectures have been given to waitresses and students seeking summer employment in cafés.

Work under our responsibilities for COMMON CARRIERS included inspections of work trains, airport facilities, and steamships; Federal institutions and construction camps were also inspected throughout the Province.

Land SUBDIVISION AND SITE INSPECTIONS by the public health inspectors have continued at a growing pace. New towns have developed in the northern part of Vancouver Island and in the Central Interior, and land subdivision is the basis for such community development. Many potential public health problems are prevented by the installation of community water and sewer systems. The public health inspector, through his medical health officer, encourages this practice, which eliminates future health hazards caused by individual wells and septic tanks.

Motor-vehicle Accidents

The Health Branch has continued to work closely with the Motor-vehicle Branch in endeavouring to prevent traffic accidents which result from medical defects of the vehicle-drivers. Several investigations of accidents resulting from such defects were initiated. One study begun related to accidents that took place during 1960 which the drivers stated resulted from a sudden loss of consciousness while the vehicle was in motion. A study has begun from which it is hoped a statistical basis for the somewhat arbitrary medical standards now in use can be developed. Investigations into freeway accidents and into the true relationship between drinking and driving have been planned.

Emergency Health Services

Emergency health services have concentrated on pre-positioning of the many medical units now being made available to the Province by the Department of National Health and Welfare. Early in the year a formal agreement between the Minister of National Health and Welfare and the Minister of Health Services and Hospital Insurance was signed, making the transfer of all of the units possible and setting forth the terms under which the Health Branch assumed custody of these medical supplies. There are now 245 disaster kits, 22 casualty collecting units, 18 advanced treatment centres, and three emergency hospitals on site in the Province. Space has been arranged for in three hospitals now under construction for the pre-positioning of three further emergency hospitals. It is hoped to secure space in at least six more hospitals where expansion is being contemplated within the next three or four years. Delivery of at least two BLOOD SHADOW DEPOTS, containing equipment for the taking and giving of large amounts of blood for transfusion, was

expected at the end of the year, to be followed by a number of packaged public health laboratories and emergency out-patient clinics.

Legislation under the *Civil Defence Act* was enacted this year which defines clearly the responsibility of the Health Branch in natural and wartime disasters—the planning, organization, and direction of a casualty-care service as well as the carrying-out of its traditional public health functions.

Preventive Dental Services

In the metropolitan areas, increasing attention was given to pre-school and kindergarten children. During the school-year 1965/66, more than 11,000 such children were examined and, where necessary, referred to their family dentist for treatment. Nearly 5,000 parents of these children were interviewed by the dental officer during the child's examination and counselled in respect to sound oral hygiene, dietary practices, and the use of fluorides. Of all Grade I pupils in the public schools of Greater Vancouver and Greater Victoria, 46.1 per cent on examination did not appear to be in need of dental treatment, 21.7 were subsequently treated by their family dentists and, in Vancouver, 21.8 per cent by the school dental clinics. A total of 89.6 per cent of Grade I pupils of these areas was therefore either reasonably dentally fit when examined or restored to dental health during the year. Of these children, nearly 4,000 parents benefited by dental health counselling.

In the Provincial health units, 53 community preventive dental programmes were successfully carried out. Forty-five communities, each without a resident dentist, were visited by six DENTAL PUBLIC HEALTH EXTERNS, who carried out a preventive dental programme for the younger children. In addition, seven other dentists visited seven further communities either on a weekly or monthly basis over a period of a few weeks. These mobile programmes were made possible by the use of transportable dental equipment including high-speed air-rotor units. Some 2,500 children received complete restorative and preventive treatment, and, in addition, by these visits many older children and adults received much-needed dental treatment as private patients. In communities with resident dentists similar services were provided to approximately 2,250 children, to whom 68 per cent were of pre-school age. In these preventive dental programmes, dental externs and resident dentists counselled some 4,500 parents in respect to sound oral hygiene and dietary practices, and approximately 4,000 children received a topical fluoride application.

The 3-YEAR-OLD BIRTHDAY-CARD DENTAL PROGRAMME has elicited responses in most areas far beyond expectations. In four of the seven communities in which the programme was first organized, between 60 and 70 per cent of all 3-year-old children have visited their family dentist. These children, at no fee to the parent, have received a complete examination with X-rays at the discretion of the dentist. Most of them have also received a topical fluoride application and parents have been counselled. During the school-year 1965/66, the programme operated in 15 communities, and over 2,000 3-year-old children thereby attended their family dentist to receive these preventive services. A further 10 such programmes are planned next year. It is further planned that by the following school-year all remaining preventive dental programmes in communities with resident dentists will have been replaced by this 3-year-old birthday-card dental programme. Two reasons for the success of this programme are believed to be the quality and appeal of the greeting card and the effective and persuasive telephone follow-up.

As a result of the success of the pilot dental hygienist programme at Penticton, two additional dental hygienists have been recruited to serve respectively with the South and North Okanagan Health Units. The dental hygienist at Penticton, by

means of telephone calls, television appearances, and radio spot announcements, has provided dental examination, counselling, and topical fluorides to 80 per cent of 3-year-old children resident in that community. The new pilot programme of the South Okanagan Health Unit has been exploring the value of a dental hygienist operating over a wider geographical area. In the North Okanagan Health Unit the new appointee was preparing to investigate, as a research project, the value of a comprehensive programme directed not only toward improving the dental health of the younger children, but of school-children of all ages, including those attending high school.

A new set of transportable dental equipment was designed by one of the regional dental consultants. When all components had been received, the equipment was tested by field trials. It is planned by the spring of next year that all dental public health externs will be re-equipped with sets of this new equipment, which is both lighter and more efficient.

Late in the year the Division participated in the organization and financing of a DIAGNOSTIC ORAL CYTOLOGICAL SERVICE. This was made available to all dentists practising in the Greater Vancouver area. The laboratory work is being provided by the cytology laboratory of the Vancouver General Hospital.

While British Columbia continues to have the most favourable ratio of dentists to population of any Province, this proportion has been falling off during the last decade. The population has increased by 33 per cent against an increase in dentists of only 25 per cent. The School of Dentistry at the University of British Columbia increased its capacity to 40 students per year, and will also have facilities to graduate 20 dental hygienists each year.

Referenda on the fluoridation of water supplies were held in 10 communities. Only two were successful in producing the necessary 60 per cent of the vote—Cranbrook (69) and Sparwood (67). Municipalities rejecting it were Delta, Fernie, Kaslo, Nakusp, Nelson, Salmo, Slocan, and Oak Bay.

Research

The PATIENT PROGRESS STUDY begun in 1965 was completed and published with assistance from the Division of Vital Statistics. The public health nursing consultant who organized the study gave presentations of it to the public health nursing section of the Canadian Public Health Association and to the senior public health nursing staff of the Ontario Department of Health.

The study on the rheumatic fever programme was mentioned earlier.

Under a National Health Grant, a study of the effects of CHLORINATED HYDROCARBON PESTICIDE RESIDUES on humans was introduced. If significant levels are detected, it is planned to carry out follow-up studies to see if any evidence of chronic ill health resulting from the absorption of these pesticides can be found.

A study to observe the effect of SUPERVISED TOOTHBRUSHING WITH AN ACIDULATED FLORIDE PHOSPHATE SOLUTION was concluded in the schools of New Westminster and Coquitlam. At the commencement of this two-year study there were 1,277 Grade VII students participating, and final results were to be determined by computer analysis. Some 1,026 children were available for final examination and nine supervised brushings had been completed. Preliminary tabulations suggest that children with " good " oral hygiene, in both the experimental and control groups, received the greatest benefit, and that the experimental group received greater benefit than the control group, who brushed with distilled water. In the Fraser Valley, a pilot study was being undertaken to investigate the incidence

of staining of permanent teeth resulting from the administration of tetracycline drugs during infancy. In the Okanagan region a pilot study attempted to evaluate the decay-preventing properties of a prophylaxis paste comprising an acidulated fluoride phosphate gel and silex mixed in equal parts. No preventive effect could be determined. In the South Okanagan, as a result of the data which has routinely been recorded by the dental hygienist, it has been possible to prepare a report on the caries experience of pre-school children aged 3 to 6 years to demonstrate the progression of caries during this age span; this is as yet scantily documented. A further study will compare the percentage of 3-year-olds of Penticton who visit their family dentist consequent to referral by the dental hygienist with the percentage of 3-year-olds in Kelowna who visit their family dentist consequent to receiving the 3-year-old birthday card. In the Kootenays a study is proceeding in several communities without water fluoridation to determine the initial and continuing utilization of fluoride supplements by families to whom prescriptions have been made available, using two different methods.

PUBLICATIONS, 1966

(Prepared by personnel, Bureau of Local Health Services.)

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" Two Year Effect of Supervised Toothbrushing with an Acidulated Fluoride-Phosphate Solution," J.C.D.A. 32:89, February, 1966, by D. C. T. Bullen, F. McCombie, and L. W. Hole.

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"Accidental Deaths among British Columbia Indians," C.M.A. Journal, 94:228–234, January 29, 1966, by N. Schmitt, L. W. Hole, and W. S. Barclay.

SPECIAL PREVENTIVE AND TREATMENT SERVICES

The Bureau of Special Preventive and Treatment Services continued the regular programmes under its several divisions—Tuberculosis Control, Laboratories, Venereal Disease Control, Occupational Health, and Rehabilitation Services. In addition, the Bureau office undertook the professional supervision and planning of a speech-therapy programme previously administered by the Rehabilitation Foundation of British Columbia, which had been largely financed by a Provincial grant. The objective of this programme is to provide speech-therapy services in the populated areas of the Province through therapists stationed in strategic locations in health units, with a consultant therapist working from the Bureau offices.

In the Division of Tuberculosis Control a further small reduction in demand for in-patient beds was experienced, with the out-patient and case-finding programmes continuing to be very active. A fourth ward has been renovated for extended-care service at Pearson Hospital and is to be occupied as staff becomes available. During the year the Women's Auxiliary expanded its services to cover the patients in the Poliomyelitis Pavilion as well as those in the extended-care wards, many of whom were previously served by them at the Marpole and Allco Infirmaries.

Other divisions continued their programmes, and in many instances there has been an emphasis on mobility in order to bring the more highly specialized services in Venereal Disease Control, Laboratories, and Rehabilitation to a greater part of the population of the Province.

Liaison with many voluntary health agencies continued to be the responsibility of this Bureau, and the reports from these agencies and the major divisions of the Bureau follow.

VOLUNTARY HEALTH AGENCIES

Each year the Provincial Government makes a grant to a number of voluntary health agencies, each of which submits an annual budget and financial statement to the Department. In addition, a brief report of the activities of each agency is submitted annually, and the highlights of these reports are given below.

British Columbia Cancer Foundation

Thirty-six of the 58 beds in the British Columbia Cancer Institute, operated by the Foundation, were covered by British Columbia Hospital Insurance Service in 1965, and after October, 1966, the cost of out-patient care at the institute and in the Victoria clinic were similarly covered. The balance of the Foundation's operating costs are met by the Health Branch and revenue from patients' accounts.

During the full calendar year 1965, 1,805 new patients were admitted to the institute and 397 to the Victoria clinic. A total of 15,126 follow-up examinations and 38,676 X-ray and cobalt treatments were carried out in the institute; 4,976 follow-up examinations and 13,484 treatments were given in the Victoria clinic. The 13 consultative clinics continue to function throughout the Province, 86 clinics being held in 1965, with a total of 173 new patients seen and 3,818 follow-up examinations given. At the request of the doctors in the Yukon Territory, a preliminary clinic was held in Whitehorse in September, 1966, and it was decided to hold one clinic a year in this area.

An electron microscope has been added to the research facilities of the institute. A new treatment in the form of high-pressure oxygen and radiotherapy was started,

using a specially designed high-pressure tank, and also during the year work commenced on the planned extension to the radiotherapy department.

The institute held a postgraduate course on cancer in November, 1966, for the doctors in the Province.

British Columbia Medical Research Foundation

The budget of the Foundation for 1966 was $35,000, of which two-thirds was provided by a Provincial Government grant and the remainder from private sources. The relatively small grants toward medical research made by the Foundation are put to the most profitable use when there is a definite shortage of funds from the larger agencies. During 1966, grants for the purchase of major items of equipment were made to the Department of Pharmacology and the G. F. Strong Laboratory for Medical Research at the University of British Columbia. There were grants to other departments of the Medical Faculty to support research in several fields, including the investigation and treatment of anæmia in the newborn, the causes of certain skin diseases, and the use of the high-pressure oxygen chamber to reduce the risks of operations on the heart. The University of Victoria, through its Department of Psychology, also received a grant for the development of methods for testing patients with diseases of the nervous system.

It is interesting to note that only about $1,800 of the Foundation's income is used for administration. All of the rest is devoted to research.

G. F. Strong Rehabilitation Centre

The provision of expanded physical facilities was given much attention by the Centre, which hopes to construct a multi-story addition.

During the year 478 patients were referred to the Centre. One hundred and ninety-one of these received consultation services and 287 received active therapy. There was a slight increase in the number of bed-days, and the average length of stay was reduced when compared with the previous year. The number of new referrals remained the same.

Of 115 severely handicapped patients discharged during the year, 67, or over 55 per cent, were retrained to complete ability. In the children's programme, which is run co-operatively with the Children's Rehabilitation and Cerebral Palsy Association, 320 patients were admitted.

Multiple Sclerosis Society of British Columbia

During the year the Society has continued its policy of education through newsletters, pamphlets, and films. The increase in public response and medical support has been marked and has resulted in a surprising growth in the number of new patients reported to the Society.

Two new branches were formed—one a Chilliwack and one at Prince George.

The Society was able to continue its support of research by an increased donation to the Multiple Sclerosis Society of Canada. Two research projects on multiple sclerosis are being conducted at the University of British Columbia.

Patient aid made possible by a grant from the Provincial Government remains the chief purpose of the Society; it increased to a total of over $12,500. Although approximately 350 patients live in the Greater Vancouver area, where there are better facilities for treatment, contact is kept with the 200 and more who reside in other parts of the Province and, through the offices of private physicians, health units, and social workers, adequate care is given to each known case in need of help.

Canadian Arthritis and Rheumatism Society

Over 1,000 British Columbia doctors referred between five and six thousand patients to CARS therapists and consultants during 1966. Of these, 62.7 per cent had some form of arthritis. The others needed physiotherapy or occupational therapy for other disabling conditions. Most of the physiotherapy treatments were given at the out-patient level through the help of the volunteer drivers. The skill of the occupational therapist is being increasingly used, and the provision of self-help aids and adjustments is becoming a vital factor in the restoration of patients to maximum function.

The travelling consultation service and the occupational-therapy van again visited all major areas of the Province. New treatment centres have been opened in conjunction with local hospitals, notably at Victoria, Richmond, Princeton, and Merritt.

Eight bursaries were awarded to the students at the School of Rehabilitation Medicine, University of British Columbia, and three new physiotherapy and occupational-therapy graduates are working with senior field staff to gain experience.

Medical consultants in ophthalmology and dermatology assist the pædiatrician in the juvenile rheumatoid arthritis programme, to which over 100 children have been referred. Because of the increasing need for surgery in hands and feet, a resident in orthopædic surgery has joined the CARS team.

British Columbia Epilepsy Society

In May the Society and the Vancouver Epilepsy Centre were involved in an administrative integration, with a common board and an executive director being established. This freed several thousand dollars, formerly absorbed by administrative costs. Most of this went into channels to meet the growing demands for direct aid to patients, such as provision of anti-convulsant medication and transportation.

As more than a third of the Vancouver Epilepsy Centre new patient case load (approximately 100 patients each year) is from outside the Greater Vancouver area, the Society concentrated on setting up adequate follow-up services in outlying areas. In consequence, a third branch member came into being in mid-October with the setting-up of the Okanagan Neurological Association in Kelowna. Plans are under way for the establishment of other branches throughout the Province during the coming year.

British Columbia Heart Foundation

In 1965/66 the Foundation's total income amounted to $310,578. During the year $177,863 was spent on 21 Provincial heart research projects and a nation-wide fellowship programme, three of whose recipients are stationed at the University of British Columbia. The Foundation carried on a comprehensive programme of public and professional education, the latter embracing physicians and nurses throughout the Province. It is estimated that three homes out of four in the Province now receive educational material about heart disease direct from the Foundation. A field secretary has been employed to promote the organization of voluntary units which will carry on year-round programmes in their own communities.

Two community service programmes are now in operation. The Cardiac Work Evaluation Unit accepts referrals of problem-heart patients, attempts to assess their capacity for work, and reinstate them in gainful employment. The transportation assistance programme for needy heart patients now helps bring heart patients from all parts of the Province whose " marginal income " entitles them to the free facilities available at the two Vancouver cardiac surgery centres.

Canadian Cystic Fibrosis Foundation

The Cystic Fibrosis Foundation has set as its main objective the giving of direct assistance to the families of children afflicted by this disease. In the past year the Foundation and the Health Branch co-operated very closely in providing drugs and equipment as well as clinical medicine through the Children's Health Centre in the Vancouver General Hospital. The Foundation has also assisted in providing teaching of physiotherapy treatment methods to parents, as well as educational programmes for the children in co-operation with the Vancouver School Board. The Foundation has received welcome assistance from the British Columbia Society for Crippled Children and the Women's Committee in its operations.

Cerebral Palsy Association of British Columbia

The Cerebral Palsy Association of British Columbia is the parent body for all cerebral palsy associations, or chapters, in the Province. Its activities are controlled by a board of directors consisting of six elected members together with two appointed representatives from each chapter.

The Association in the past year has been chiefly concerned with three major problems—namely, plans for new accommodation, transportation costs for child patients, and the rehabilitation of adult patients.

National Health Grants

During 1966/67 a total of $7,634,101 was allocated to the Province of British Columbia for the development, improvement, and extension of health services. (Additional funds were made available for public health research.) The grants are administered under nine classifications. Funds for professional training and for research studies being conducted in this Province were notably increased.

LABORATORY ADVISORY SERVICES

The Technical Supervisor of Clinical Laboratory Services was involved with many aspects in the laboratory field, including increased pathologist services, laboratory planning, equipment selection, uniform method of reporting work loads, and education, both initial and postgraduate.

As secretary for the Laboratory Advisory Council, the Technical Supervisor collected data and arranged meetings to investigate strengthening of existing regional pathology services and initiation of new regions. In January a new region was formed to serve the smaller hospitals in the Greater Vancouver area, and three pathologists and a regional technologist based at St. Paul's Hospital undertook the direction of laboratories in six hospitals. Authorization was given for a second pathologist in the West Kootenay area, and approval in principal was granted for a pathologist for the East Kootenay region pending completion of the new hospital in Cranbrook.

The Council's subcommittee on laboratory planning was active in meeting with architects and hospital personnel and making recommendations to the hospital-construction division of the British Columbia Hospital Insurance Service. Another subcommittee reviewed applications for equipment grants. Increased demands for automated equipment became evident.

A standard method for recording work loads was circulated to all regional laboratory technologists. This was on a trial basis, but was generally well accepted and will probably be instituted by all hospitals in 1967.

The Advisory Committee to the School of Medical Technology at the British Columbia Institute of Technology revised the curriculum. Senior Matriculants enrolled in this course completed 10 months at the institute before a year of practical training in an approved laboratory. A study was commenced whereby Junior Matriculants may attend the institute for two years as is the case with students in the other technologies.

Twenty-five technologists successfully completed the three-year correspondence course in clinical chemistry which was offered by the Department of Continuing Education at the University of British Columbia. These technologists received credit toward higher certification with the Canadian Society of Laboratory Technologists. A night-school course in microbiology commenced in the fall, sponsored by the British Columbia Institute of Technology and Shaughnessy Hospital. Successful candidates will be awarded credits for advanced certification. The ninth annual postgraduate course in medical laboratory technology, held in Kamloops in May, was highly successful.

TUBERCULOSIS CONTROL

As we review the history of the Province in this Centennial Year and pay tribute to our public health pioneers, it is interesting to note the development of tuberculosis control during the present century.

While the Division of Tuberculosis Control was organized in 1935, the actual history of the tuberculosis-control movement in British Columbia started many years ago. The first programme to combat tuberculosis commenced in 1904 with the organization of the British Columbia Anti-tuberculosis Society. In 1907 a ranch at Tranquille had been acquired, and the first treatment centre for tuberculosis in the Province was established with the use of the ranch house to accommodate 16 patients. At the same time, construction was commenced on the first building at Tranquille (now used by the Mental Health Services). Its completion two years later increased the capacity at Tranquille Sanatorium to approximately 100 patients. At the peak of its occupancy in 1952, the facilities at Tranquille had expanded to approximately 400 beds.

As early as 1908, the British Columbia Anti-tuberculosis Society was having difficulty in raising funds to maintain the institution at Tranquille, and representation was being made to the Provincial Government to take it over so that the Society could be relieved of this financial responsibility. This eventually took place in 1921. The *per diem* cost at that time amounted to $3.91.

At the time of the formation of the Division in 1935, tuberculosis-treatment facilities also existed at the Vancouver General Hospital, St. Joseph's Oriental Hospital in Vancouver, and at the Tuberculosis Pavilion at the Royal Jubilee Hospital in Victoria. The Division took over these facilities together with Tranquille Sanatorium; at the time, the total bed capacity was 538. This rose to 925 at its peak in 1952.

From the inception of the anti-tuberculosis programme in British Columbia, the objective had always been to provide sufficient beds for those suffering from tuberculosis. The compaign proceeded for almost 50 years before this was finally accomplished with the opening of Pearson Hospital in Vancouver in 1952. Waiting lists of 200 to 300 always existed prior to that time. The need for beds was partially met through expansion of Tranquille Sanatorium and with the opening of a tuberculosis wing at Shaughnessy Hospital in Vancouver during World War II. Following the war an R.C.A.F. hospital of approximately 100 beds was acquired at Jericho Beach in Vancouver.

In the early 1940's, the Federal Government instituted a programme of tuberculosis control for the Indians of British Columbia and eventually operated three sanatoria at Coqualeetza, Miller Bay (Prince Rupert), and Nanaimo. At the peak, about 1,500 beds for the treatment of tuberculosis were in use in British Columbia.

While the crusade against tuberculosis was being waged on the treatment front, the continuing need for expansion of beds had occurred as a result of a gradual extension of the case-finding programme. Soon after the treatment centres for tuberculosis were established, it became apparent that supervision of these patients would be needed if they were to be discharged from sanatoria. Moreover, the need for specilized facilities for the examination of contacts and suspects of tuberculosis was apparent. To meet this need, the Rotary Club of Vancouver established a tuberculosis dispensary in downtown Vancouver in 1918. A completely new building, specially equipped, was constructed. When the Division of Tuberculosis Con-

trol was formed, this clinic was moved to its present site on the grounds of the Vancouver General Hospital, now Willow Chest Centre.

Following the establishment of this clinic, it became apparent that a clinic service for tuberculosis patients, contacts, and suspects would be necessary in other parts of the Province. This led to the establishment of travelling diagnostic clinics, as we now know them. In 1923 the first was provided by the British Columbia Anti-tuberculosis Society after it had been relieved of the responsibility of operating Tranquille Sanatorium.

The big break-through in case-finding of tuberculosis came with the advent of the miniature X-ray in the early 1940's. This led to the intensification of tuberculosis case-finding through community surveys, and at its height this programme was uncovering about 2,500 new active cases of tuberculosis each year.

The turning point in the campaign against tuberculosis came when the " miracle " drugs which are specific against the disease became available shortly after World War II, particularly since 1950. This led to a much more rapid cure of tuberculosis, a shortening of sanatorium stay, and a very marked reduction in death rates. At the beginning of the century, tuberculosis ranked amongst the highest causes of death, and the estimated annual death rate was about 200 per 100,000. At the beginning of the anti-microbial era, the death rate had dropped to about 50 per 100,000, but this represented over 500 deaths per year in British Columbia. At the present time the death rate is approximately three per 100,000, and the number of deaths per year has been reduced to about 53. Tuberculosis is not even listed in the 10 leading causes of death. All this, of course, has led to reduction in the need for beds for treatment.

Temporary quarters in Vancouver and Victoria were relinquished, and finally in 1958 it was possible to release all the beds at Tranquille Sanatorium, at which time the treatment needs could be looked after in the two institutions in Vancouver—namely, Willow Chest Centre and Pearson Tuberculosis Hospital—which had a combined capacity of approximately 360 beds. At the end of 1966, only 150 patients are under treatment in Provincial sanatoria, and most of the beds at Pearson Hospital have been converted to the care of patients with chronic illnesses other than tuberculosis.

While case-finding activities have been stepped up over the past 20 years through expansion of stationary and travelling diagnostic clinics and through community tuberculosis surveys, tuberculin testing programmes, and hospital admission X-ray programmes, fewer cases of tuberculosis are now found and the search becomes more difficult. Whereas about 20 years ago 2,500 new active cases of tuberculosis were found each year, at the present time, with intensified and more efficient case-finding, about 500 active cases are uncovered annually. This indicates that a large public health problem continues in uncovering the unknown reservoir.

The diagnostic clinics, besides their case-finding activities, are responsible for the supervision of the 20,000 known cases of tuberculosis, and amongst these are approximately 1,000 cases under treatment for tuberculosis at home while on drug therapy. While the beds for treatment of tuberculosis have been reduced by 90 per cent since 1952, when we now consider the people in sanatorium as well as those who are at home on drug therapy, there are almost as many people under treatment today as there were before the anti-microbial era. Since domiciliary treatment for tuberculosis cases has proven successful, the emphasis has changed from treatment in the sanatorium to treatment at home.

The pattern of tuberculosis control that has been established from long experience continues with remarkably little change. The broad principles of case-finding,

treatment of active cases, case-holding and follow-up of known cases, contact-tracing, and recognition of likely sources of new cases of tuberculosis continue to be the main features of the programme. The conscientious application of these principles and their variation in detail to meet changing circumstances and local problems is basic to tuberculosis control.

In the field of treatment, a large proportion of the patients are being treated by domiciliary care, sometimes even without sanatorium admission. But during the past year there has been no reduction in the number of beds for tuberculosis at Willow Chest Centre and Pearson Tuberculosis Hospital, which stands at 179. However, it is expected that a reduction in beds may be possible next year.

The follow-up and case-holding services provided through the stationary and travelling diagnostic clinics of the Division have shown little change in the volume of work during the past year and are the mainstay of the tuberculosis-control service. In the case-finding programme, which is also a function of the diagnostic clinics, the community surveys played the major role. During the past year a large-scale tuberculosis survey was carried out in Greater Victoria, the Gulf Islands, and south of the Malahat on Vancouver Island, and 101,094 cases were examined in this survey. This was followed by a community survey throughout West and North Vancouver, with approximately 45,000 persons examined. At the end of the year a community survey was being conducted in South Burnaby. The Ocean Falls-Bella Coola area was also surveyed in the past summer. This finds us almost at the end of a total tuberculosis survey that has been carried out in all parts of the Province and has taken eight years to complete.

The falling-off in use of hospital admission miniature X-rays has continued. In several instances, when we have been requested by hospitals to remove our equipment, the machines have been installed in the community health centre, and have been the subject of a pilot study to evaluate the effectiveness and practicality of this move. If the new arrangement proves effective, the miniature X-ray equipment will be set up in many more health centres, and thus a valuable out-patient chest X-ray service will be continued.

Education is a continuing function of the Division, and the professional staff is called on a great deal to participate. This education is directed not only to the patients and the lay public, but also to the nursing and medical community, both at an undergraduate and postgraduate level.

The programme for long-term care of non-tuberculous patients at Pearson Hospital continues to expand. There are now 35 patients in the Poliomyelitis Pavilion and 128 patients in the other long-term beds, including those devoted to severely disabled persons now termed " extended care " patients. In the Poliomyelitis Pavilion there were no admissions of poliomyelitis cases during the year. During the past two or three years, most of the new admissions have been patients who have been paralysed because of trauma or degenerative neurological conditions and who need assistance in breathing.

The Division has now had about one year's experience in caring for the seriously disabled patients, and a useful insight into the problems has been gained. Many innovations and improvements in the handling of these patients have come about, but the nursing load is heavy and becomes heavier as a greater percentage of completely disabled patients, particularly those with degenerative neurological conditions, is admitted. While most of the patients are of the helpless (that is, extended care) type, the Division feels that if the institution is to serve a useful function, a reasonable proportion must be of the type requiring less personal care.

A notable addition to the facilities at Pearson Hospital was created with the opening of the activity wing for the chronic-care patients. This provided space for a physiotherapy department and an occupational-therapy department. There was also provision for entertainment, motion pictures, live talent shows, and group therapy through remedial games. In addition, the lower floor provides room for woodworking machines, storage of lumber and equipment, and a room for painting, gardening, and general work for the occupational-therapy patients; the remainder of this floor is used by the Women's Auxiliary for storage of rummage and preparation for the spring sale.

A quantity of new equipment was obtained during the year for the fully modern physiotherapy department. With a complete staff of six physiotherapists and three physiotherapy aides, all types of conditions can now be handled.

VENEREAL DISEASE CONTROL

The increase in venereal disease that occurred throughout the world in 1960 became apparent in British Columbia to the point of epidemic conditions. Vigorous methods of suppression and control were applied and later intensified with the co-ordinated efforts of this Division, local health personnel, and the private practitioners. The incidence of syphilis was at its peak in 1964; gonorrhœa reached its high mark in 1965. Syphilis, especially, had declined markedly by the end of 1966. The improvement in gonorrhœa was less satisfactory.

Reported Venereal Disease, British Columbia, 1946, 1951, 1956, 1961–66

Year	Infectious Syphilis (Primary and Secondary)		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	0.4	3,425	244.9
1961	64	3.9	3,670	225.3
1962	183	11.0	3,962	238.8
1963	280	16.6	5,012	295.7
1964	304	17.5	5,821	334.9
1965	165	9.2	6,005	335.7
1966	70	4.0	5,600	324.0

[1] Rate per 100,000 population.

INFECTIOUS SYPHILIS

After syphilis reached its peak in 1964, stringent control measures were introduced and the epidemic was brought under control. Syphilis is a bacterial disease that can be effectively treated by antibiotics, and basically the programme of control is to treat everyone exposed to the disease to prevent them from spreading it. It is essential to diagnose the index case, then treat the sexual contacts, and contacts of contacts, preferably before they have a chance to develop lesions which are infectious. The incubation period of syphilis is quite long, usually three to four weeks. This is an important factor in the epidemiologic treatment of contacts.

The reporting of syphilis has been exceptionally good. Many cases, in fact, turn out to be less serious diseases; until the patient's laboratory tests have been completed, however, control measures, including antibiotics, are applied. There have been no untoward reactions from this use of antibiotics. A second important factor is that the Provincial Laboratory does all the screening tests for syphilis, so the Division of Venereal Disease Control is immediately informed of all positive laboratory results and can immediately introduce consultative services to the physicians concerned. A third factor has been the progressive improvement in effective treatment regimes for this disease.

In Vancouver the co-operation given to the Venereal Disease Control Centre by male homosexuals has been quite remarkable. Implementation of the by-law requiring less privacy in steam baths has reduced promiscuous homosexual activity and led to the virtual eradication of syphilis from this group at the present time.

We have reached a point in control where we rarely find a case of syphilis acquired in the Province; it is apparent that the vast majority of cases of infectious syphilis acquired their infection elsewhere.

LATENT AND LATE SYPHILIS

As latent syphilis may be infectious, blood screening tests are important in uncovering persons who were infected with syphilis but who never had any clinical manifestations of the disease. These people can be adequately treated, all chance of infecting others is removed, and the danger of going on to develop the serious late manifestations of the disease is prevented.

At present it is cumbersome to have a confirmatory T.P.I. test done as it requires extra blood samples with resultant delay. The Provincial Laboratory intends to introduce the very rapid newly developed F.T.A.-A.B.S. test, which can immediately confirm a diagnosis.

The policy of taking blood tests of all male admissions to Oakalla Prison Farm was continued, and proved very effective as a measure of finding latent or asymptomatic syphilis. However, as many admissions are repeaters, the number of cases found is decreasing.

GONORRHŒA

The control measures that have been introduced have been effective in some locations and ineffective in others. The basic programme is referred to as speed-zone epidemiology, or the rapid treatment of females who have been named by males. Males develop rather severe symptoms of pain on micturition and purulent discharge two to seven days after infection, and so are acutely aware of their infection, but this is not necessarily so with females.

We have been developing more effective treatment procedures, and have reached a point where pills are more effective in treatment than injections. Ampicillin and certain tetracycline compounds have essentially replaced the penicillin syringe. This allows a safer, more easily administered, and more acceptable form of treatment.

We are left with two areas where gonorrhœa is still very prevalent—the northern part of the Province and the skid-road section of Vancouver. Unfortunately any control programme for gonorrhœa tends to lag severely behind the spread of the disease because of the very short incubation period of two to seven days.

In order to increase the effectiveness of our control measures, it was considered that prophylactic treatment would have to be introduced. An experimental programme of prophylactic treatment of the highest-incidence group was tried. Women admitted to the Vancouver City Gaol on vagrancy charges were found to have a 50-per-cent incidence of gonorrhœa infection. A programme of treating them every time they were admitted on this charge was introduced in March, 1966, and by August, 1966, the infections had decreased to 8 per cent.

A consultant nurse was employed in August, and after orientation in the Division was sent into the northern centres to find ways to assist the health units, physicians, and police in identifying the promiscuous females, in having them all treated, and in repeating this treatment as often as necessary to eradicate gonorrhœa from that community.

In order to deal with the infection on Vancouver's skid road, a women's clinic was opened on the third floor of Metropolitan Health Unit No. 1, located at the corner of Abbott and Carrol Streets, to operate each afternoon from 2 to 4 p.m. This aggressive programme, designed to eradicate this rapid-spreading epidemic disease, had never been tried in the general population. There is a very good possibility of its success, largely because of the high regard that each community has for its public health physicians and nurses, who are frequently able to gain almost complete co-operation from the people they serve.

GENERAL

The standard control measures of providing clinic facilities in Vancouver, Victoria, and New Westminster were continued. Women's clinics were operated at Vancouver City Gaol, Willingdon School for Girls in Burnaby, and Oakalla Prison Farm. The work of the Division in maintaining files, identifying contacts, and distributing contact information throughout the Province is a rapid, continuing process. The consultative services of the Division must continue because as syphilis and gonorrhœa become less common they are seldom seen. However, they are still highly communicable, and experts are needed to assist physicians in handling them. The physician education programme has been extended by placing a woman physician to operate the women's clinics in the gaols, and by increasing the number of physicians employed on a part-time basis in the Vancouver clinic so that there is now a physician in the clinic from Monday to Friday from 9 a.m. to 4 p.m.

LABORATORIES

In its 36th year, the Health Branch's Division of Laboratories now has facilities and staff to perform a growing range of laboratory tests. These specialized services are concerned chiefly with environmental control and with the diagnosis and control of communicable disease.

In Table I the number of tests and the work load in Dominion Bureau of Statistics (D.B.S.) units performed at the main laboratories are compared with the figures for 1965. The routine work load increased by less than 1 per cent, from 1,034,000 units in 1965 to 1,040,000 units in 1966. Omitted from these figures is the work load associated with virology, the shellfish and air-quality programme, and the Salmonella project. The main increases in work load were in special tests for mycobacteria, animal inoculations, measurement of antistreptolysin 0 titre, examination of smears for tubercle bacilli, and public health chemistry; decreases occurred in examination of cultures for the gonococcus and dark-field examination of exudates for *Treponema pallidum*. The number of tests and the work load in units performed at the branch laboratories at Nelson and Victoria are reported in Table II. Each Dominion Bureau of Statistics (D.B.S.) unit is equivalent to 10 minutes of work. The routine work load of the Division in 1966 comprised:—

	D.B.S. Units
Main laboratories	1,040,292
Nelson branch laboratory	33,550
Victoria branch laboratory	149,489
Total	1,223,331

BACTERIOLOGY SERVICE

Tests for the Diagnosis and Control of Venereal Diseases

After increasing steadily from 1963 to 1965, the demand for standard tests for syphilis (S.T.S.) showed minimal increase in 1966. The *Treponema pallidum* immobilization (T.P.I.) test was performed by the National Laboratory of Hygiene and the Ontario Public Health Laboratories on 301 sera; positive results were reported on 121 (40 per cent) patients. During 1966, 366 exudates from 272 individuals were examined by dark-field illumination for the presence of *Treponema pallidum*; 32 (12 per cent) of these patients yielded positive results.

The work load for the diagnosis and control of gonorrhœa decreased by 11 per cent due to the diminished demand for cultures. Of 42,600 smears examined, 5,300 (12 per cent) were positive; of 7,800 cultures investigated, 2,000 (26 per cent) were positive.

Other Serological Procedures

The demand for serological tests for the diagnosis of typhoid, paratyphoid, glandular, and undulant fevers increased by 9 per cent in 1966. The number of specimens examined for antistreptolysin 0 titre increased by 19 per cent, from 4,900 in 1965 to 5,800 in 1966.

One hundred and seventy-five serological tests on sera submitted from 156 patients were performed at reference laboratories. The following positive results were obtained on these patients: Toxoplasmosis (7), histoplasmosis (3), lymphogranuloma venereum (2), toxocariasis (2), trichinosis (2), leptospirosis (1), and listeriosis (1).

Tests Relating to the Diagnosis and Control of Tuberculosis

The number of specimens submitted for culture for *Mycobacterium tuberculosis* increased by 5 per cent, from 24,500 in 1965 to 25,700 in 1966. Requests for culture of sputum increased by about 2 per cent. Requests for culture of specimens such as stomach washings and serous fluids increased by 16 per cent, from 5,400 in 1965 to 6,300 in 1966. The number of smears examined increased by 17 per cent, from 10,000 in 1965 to 11,700 in 1966. The number of animal inoculations increased by 27 per cent, from 383 in 1965 to 487 in 1966. The number of strains of acid-fast bacilli examined for anti-microbial sensitivity decreased by 9 per cent.

Isolation and Identification of Pathogenic Enteric Bacteria

The number of specimens submitted for culture for Salmonella/Shigella and enteropathogenic *Escherichia coli* (E.E.C.) decreased by 3 per cent, from 17,200 in 1965 to 16,700 in 1966. The enteric pathogens isolated from 747 individuals comprised 382 Salmonellæ, 228 Shigellæ, and 137 E.E.C. Thirty different types of Salmonella were isolated in 1966, including two types for the first time in Canada, *Salmonella emek* and *S. alachua*. The most common types isolated from human sources were *S. typhimurium* (88), *S. heidelberg* (73), *S. saint paul* (54), and *S. infantis* (53). Two cases of typhoid fever were confirmed bacteriologically. Five outbreaks of salmonellosis were investigated. The Shigella strains isolated in 1966 included *Sh. flexneri* (131), *Sh. sonnei* (74), and *Sh. boydii* (23).

The Salmonella project supported by Provincial and National Health Grant funds was concluded on March 31, 1966, after four years and eight months of investigation into the major reservoirs and vehicles of Salmonellæ in British Columbia.

Other Bacteriological Tests

Diphtheria

No cases of diphtheria were diagnosed in the laboratory during 1966. *Corynebacterium diphtheriæ* was isolated in only three of the past eight years. There was little change in the demand for cultures of nose and throat swabs for *C. diphtheriæ, Staphylococcus aureus,* and *Streptococcus pyogenes.*

Blood Cultures

Of the 216 blood cultures submitted for examination, 21 yielded organisms. The bacteria isolated were *Aerobacter aerogenes* (8), *Staphylococcus aureus* (5), *Staph. albus* (5), *Streptococcus pyogenes* (1), *Hæmophilus influenzae* (1), and diphtheroid (1).

Food Poisoning

Ninety-four samples of human food collected during the investigation of suspected food-poisoning incidents were examined bacteriologically. The following organisms were isolated: *Bacillus cereus* (3) and *Staphylococcus aureus* (2).

Mycotic Infections

The demand for mycological investigations increased by 2 per cent, from 4,700 in 1965 to 4,800 in 1966. Twenty-eight per cent of the specimens yielded positive results. The following dermatophytes were identified: *Trichophyton rubrum* (175), *Microsporon canis* (103), *T. mentagrophytes* (54), *Epidermophyton floccosum* (18), *T. tonsurans* (9), *T. verrucosum* (5), *M. gypseum* (2), and *T. violaceum*

(1). In addition, *Candida albicans* (721) and *Candida* spp. (220) were isolated. *Malassezia furfur* was identified microscopically on 25 occasions.

Parasitic Infections

The demand for examinations for intestinal parasites increased by 9 per cent, from 5,700 in 1965 to 6,200 in 1966. The following protozoan parasites were identified in stool specimens: *Entamœba coli* (214), *Giardia lamblia* (201), *Endolimax nana* (97), *Entamœba histolytica* (38), *Iodamœba bütschlii* (20), *Chilomastix mesnili* (15), and *Trichomonas* spp. (3). The following helminthic eggs were identified in stool specimens: *Trichuris trichiura* (73), *Clonorchis sinensis* (40), hookworm (38), *Ascaris lumbricoides* (20), *Enterobius vermicularis* (18), *Hymenolepis nana* (6), and *Diphyllobothrium latum* (1). Larvæ of *Strongyloides stercoralis* (1) and mature worms of *Ascaris lumbricoides* (7), *Tænia saginata* (4), *Gordius* spp. (3), and *Enterobius vermicularis* (1) were also identified. Eggs of *Enterobius vermicularis* were found in 385 (20 per cent) of 1,898 anal swabs.

PUBLIC HEALTH CHEMISTRY SERVICE

The Public Health Chemistry Service conducted the same five projects in 1966 as in 1965—water bacteriology, shellfish bacteriology, chemical analysis of water and waste water, air pollution, and maintenance and distribution of field kits.

Water Bacteriology

The number of water samples submitted for the coliform test increased by 8 per cent, from 15,400 in 1965 to 16,600 in 1966. The number of completed coliform tests increased by 7 per cent, from 2,300 in 1965 to 2,500 in 1966. A special survey of swimming-waters in Okanagan Lake was carried out during the summer. The confirmed coliform and the fæcal coliform tests were performed on 168 samples, the fæcal streptococcal test on 51 samples.

Shellfish Bacteriology

The programme for the surveillance of some 34 shellfish leases continued in 1966. Contamination, low in the summer, showed a significant increase during the winter. The number of shellfish and water samples examined increased by 44 per cent, from 694 in 1965 to 999 in 1966. Tests were carried out on 194 shellstock samples, 166 shucked oysters, and 639 water samples.

Chemistry of Water and Waste Water

The work load for chemical analysis of water and waste water increased by 17 per cent, from 44,900 units in 1965 to 52,400 units in 1966. This increase was due to increased testing of municipal water supplies, increased requests from the Pollution-control Board, increased demand for special tests such as arsenic, cyanide, sulphide, mercaptans, and metals, and increase in the number of samples for determination of the biochemical oxygen demand (B.O.D.). The water-pollution survey of the Okanagan Valley and monthly testing of composite samples of fluoridated water, initiated in 1965, continued in 1966.

Air Pollution

The Division participated in the study of air pollution in the Alberni Valley and Chilliwack. This is mentioned elsewhere in the Report.

Maintenance and Distribution of Field Kits

Twenty different types of field kits were maintained and distributed for use by public health inspectors in preliminary chemical screening. Sixteen kits were issued during the year. Maintenance of kits held by field staff required the preparation and shipping of 204 different reagents or items of laboratory supply.

VIROLOGY SERVICE

Tests and procedures necessary for the investigation of enterovirus and respiratory virus infections were further developed in 1966. The new facilities were employed during the investigation of a widespread epidemic of influenza early in 1966. Commencing in the Greater Vancouver area early in February, the epidemic spread to other parts of the Province in March and April. With co-operation from medical health officers and private physicians, clinical specimens were collected from more than 100 patients; laboratory examination revealed that influenza viruses of Type A and Type B were involved in the British Columbia epidemic. The influenza Type A strain proved to be a new strain, not previously isolated; it was designated Influenza A_2/Canada/66 by the World Health Organization International Influenza Centre.

Two other incidents were investigated: an outbreak of mild illness associated with rash occurred during April in the Vancouver area, which proved to be rubella, and an outbreak among children in the Prince Rupert area characterized by high fever, respiratory infection, and rash, which proved to be measles.

Infections with the following viral agents were demonstrated by virus isolation or by serological techniques in British Columbia in 1966: Poliovirus Type I (1), Type III (1); Coxsackie B4 (10); Coxsackie B5 (4); Echo 6 (2); Echo 14 (4); Adenoviruses (5); mumps (2); rubella (7); influenza (epidemic A and B); measles (epidemic); and unidentified viruses (7). The diverse clinical syndromes seen in association with one or more of these viruses included encephalitis, meningitis, pericarditis, myocarditis, pneumonia, rashes, gastro-enteritis, and fever.

During 1966, 1,699 specimens from 650 patients were examined using tissue culture, animal, or embryonated egg techniques; 22,000 tubes of tissue culture were prepared; 86 litres of media were used; and 92 families of suckling mice were inoculated. During the influenza epidemic, 1,500 embryonated eggs were used.

BRANCH LABORATORIES

The Kootenay Lake General Hospital houses the Nelson branch laboratory. During the vacation of the technician-in-charge, specimens were shipped daily by air for examination at the main laboratories. The work load decreased by about 15 per cent, from 39,400 units in 1965 to 33,600 units in 1966. This was due to a rearrangement of the laboratory's operations, in which some of the technology was taken over by the main laboratories, and much of the water-sample work was eliminated.

The Royal Jubilee Hospital laboratory continued to provide public health laboratory services for the Greater Victoria Metropolitan Board of Health. The work load increased by about 15 per cent, from 130,200 units in 1965 to 149,500 in 1966.

Table I.—Statistical Report of Examinations and Work Load in 1965 and 1966, Main Laboratory

	Unit[1] Value	1966		1965	
		Tests Performed	Work-load Units	Tests Performed	Work-load Units
Bacteriology Section					
Enteric Laboratory—					
Cultures—					
Salmonella-Shigella	7	13,925	97,475	14,275	99,925
Pathogenic *E. coli*	10	2,772	27,720	2,896	28,960
Food-poisoning examination	15	94	1,410	77	1,155
Miscellaneous Laboratory—					
Animal virulence (diphtheria)	6	6	36	3	18
Cultures—					
C. diphtheriæ	5	11,316	56,580	11,488	57,440
Hæmolytic staph.-strep.	5	11,159	55,795	11,246	56,230
Miscellaneous	5	4,084	20,420	4,077	20,385
Fungi	5	4,756	23,780	4,657	23,285
N. gonorrhœæ	5	7,761	38,805	10,580	52,900
Smears for—					
N. gonorrhœæ	2	42,596	85,192	45,863	91,726
Vincent's	2	70	140	76	152
Miscellaneous	2	3,457	6,914	3,459	6,918
Serology Laboratory—					
Agglut.—Widal, Paul-Bunnell, Brucella	2	16,578	33,156	15,271	30,542
Anti-streptolysin test	5	5,784	28,920	4,872	24,360
Blood—					
V.D.R.L. (qual.)	1	151,935	151,935	152,072	152,072
V.D.R.L. (quant.)	2	2,453	4,906	2,721	5,442
Complement-fixation	2	8,751	17,502	7,863	15,726
C.S.F.—					
Complement-fixation	2	2,020	4,040	1,946	3,892
Complement-fixation (quant.)	2	16	32	12	24
Cell count	2	20	40	46	92
Protein	2	21	42	37	74
Dark field—*T. pallidum*	3	366	1,098	414	1,242
Tuberculosis Laboratory—					
Animal inoculation	10	487	4,870	383	3,830
Anti-microbial sensitivity	25	1,415	35,375	1,551	38,775
Atypical mycobacteria	25	365	9,125	398	9,950
Cultures—*M. tuberculosis*	6	25,707	154,242	24,525	147,150
Smears for *M. tuberculosis*	2	11,656	23,312	9,997	19,994
Intestinal parasites	3	6,237	18,711	5,709	17,127
Chemistry Section					
Water bacteriology—					
Plate count	2	1,560	3,120	1,547	3,094
Coliform test	5	16,643	83,215	15,405	77,025
Water chemistry—					
Routine analysis	50	262	13,100	236	11,800
Partial analysis	----	3,283	22,644	2,432	20,055
B.O.D.	80	208	16,640	163	13,040
Totals	----	357,763	1,040,292	356,297	1,034,400

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

Table II.—Statistical Report of Examinations and Work Load during the Year 1966, Branch Laboratories

	Unit[1] Value	Nelson		Victoria	
		Tests Performed	Work-load Units	Tests Performed	Work-load Units
Enteric Laboratory—					
Cultures—					
Salmonella-Shigella	7	295	2,065	1,944	13,608
Pathogenic *E. coli*	10	.....	.....	701	7,010
Food-poisoning examination	15	.....	.....	8	120
Miscellaneous Laboratory—					
Animal virulence (diphtheria)	6	.....	.....	1	6
Cultures—					
C. diphtheriæ	5	1,088	5,440	4,997	24,985
Hæmolytic staph.-strep.	5	1,088	5,440	4,997	24,985
Miscellaneous	5	359	1,795	402	2,010
Fungi	5	.....	.....	920	4,600
N. gonorrhœæ	5	.....	.....	528	2,640
Smears for—					
N. gonorrhœæ	2	482	964	902	1,804
Vincent's	2	42	84	9	18
Miscellaneous	2	23	46	140	280
Serology Laboratory—					
Agglut.—Widal, Paul-Bunnell, Brucella	2	559	1,118	883	1,766
Blood—					
V.D.R.L. (qual.)	1	5,070	5,070	11,514	11,514
V.D.R.L. (quant.)	2	20	40	78	156
Complement-fixation	2	.....	.....	448	896
C.S.F.—					
Complement-fixation	2	.....	.....	454	908
Cell count	2	.....	.....	492	984
Protein	2	.....	.....	504	1,008
Dark field—*T. pallidum*	3	.....	.....	9	27
Tuberculosis Laboratory—					
Animal inoculation	10	.....	.....	4	40
Cultures—*M. tuberculosis*	6	.....	.....	2,286	13,716
Smears for *M. tuberculosis*	2	58	116	1,557	3,114
Intestinal parasites	3	53	159	1,072	3,216
Water Laboratory—					
Plate count	2	4	8	1,644	3,288
Coliform test	5	2,241	11,205	5,358	26,790
Totals	.....	11,382	33,550	41,852	149,489

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

OCCUPATIONAL HEALTH

PROVINCIAL EMPLOYEES' HEALTH SERVICE

The Provincial Employees' Health Service is considered as one aspect of an over-all public health programme in the community, and the work of the occupational health physician or nurse supplements that of a private physician.

The occupational health programme includes the following:—

—Measures for the maintenance and improvement of health and prevention of disease; for example, immunization.

—Provision of emergency care and advice (when staff available in the area) for injury or illness occurring at work.

—Diagnostic and counselling service.

—Special medical examination; for example, to assist in proper job placement.

—An industrial hygiene programme to detect, assess, and recommend control measures for environmental health hazards.

—Co-operation with departmental safety programmes to reduce number of accidents.

—Provision of a health education programme for the worker and his family.

—Liaison with private medical practitioners and community health and welfare agencies.

The present staff of the Health Service consists of one physician (in Vancouver), three nurses (one at each of the main centres of employment—Victoria, Vancouver, and Riverview Hospital), and a clerk-stenographer.

In order to keep informed regarding the illnesses and injuries occurring among the large Government employee groups scattered throughout the Province, the Director receives, from private physicians, Part II of the Sickness Report (including the "Physician's Confidential Report" section of the C.S.C. 5), which contains the medical diagnosis, etc. This is most valuable as far as the operation of the Occupational Health Programme is concerned.

A committee has been established by the Civil Service Commission to deal with problem health situations that the individual department is not able to handle. It consists of the Director of this Division, three members of the Civil Service Commission staff, and the departmental personnel officer involved. The function of the committee is to assist employees who have a major health problem that prevents them from functioning in their normal capacity.

RADIATION PROTECTION SERVICE

Although ionizing radiation was on this earth before man, it was not until Roentgen discovered X-ray in 1895 and the Curies extracted radium from pitchblende that man became aware of its dangers. With the splitting of the atom in 1939, and the ever-increasing use of artificially produced radioactive isotopes, the potential for widespread harm to humans became critical.

The radiation protection programme started in 1958 and is a mere infant in our Centennial picture. In eight years it has made excellent strides in the fields of education and inspection.

The refresher courses and symposiums were again put on for dental assistants and medical X-ray technicians from all over the Province; they were the first of

their kind in Canada. Also, the course on health hazards and radiation protection for industrial radiographers is still the only one in Canada being conducted on a Provincial scale.

Many lectures on the radiation protection programmes have been given throughout the Province by all members of the staff to the medical, dental, and chiropractic professions, to industrial and teaching personnel, and to special-interest lay groups.

The Radiological Advisory Council, on which the Service is represented, has acted as consultant in improving the planning for safety and efficiency of hospital X-ray quarters. This is done in co-operation with the British Columbia Hospital Insurance Service, the individual hospitals, and the professions concerned.

Inspections and on-site consultations this year have covered the northern half of the Province and the East Kootenay region. The inspections dealt with all forms and uses of ionizing radiation as used by the medical profession, dentists, chiropractors, veterinarians, industry, and new fire-alarm systems using a radioisotope.

The inspection of equipment using radioisotopes finds the Service representing the Atomic Energy Control Board in this Province; their work is increasing. In this field there are rapidly expanding research programmes in the universities. Simon Fraser University has just installed a powerful neutron generator. In medical use, the application of radioactive isotopes is again on the increase as new and more sophisticated equipment and techniques become available.

The philosophy in the Radiation Protection Service can best be summed up in the statement contained in one of the survey forms under the caption " Purpose of Survey ":—

"(1) To assess the radiation safety aspects of an installation as they relate to the patient, operating personnel, and the occupants of the areas adjacent to the installation.

"(2) To create an awareness of good radiation hygiene in the personnel responsible for the operation of an ionizing radiation installation.

"(3) To recommend changes in equipment and operating procedures that are consistent with the philosophy of good diagnostic results with minimum radiation exposure for all concerned."

AIR-POLLUTION SURVEY

The study of air pollution in the Alberni Valley and its relation to respiratory disease has been continued, together with the study in a control city within the Province. This and other activities in air pollution are mentioned elsewhere in the Report.

REHABILITATION SERVICES

In order that society in general shall become involved in the process of rehabilitation, emphasis on the Division's activities has been on promoting the operation of rehabilitation programmes on a local basis, with administrative and financial assistance from the Division.

Additional local rehabilitation committees have been set up. These committees are now operating in 19 separate local communities. They consist essentially of the local medical officer of health, the local supervisor of welfare, and the local Canadian Manpower Special Services Officer. The committees have full local automony, with powers to enlist whatever help is necessary from other resources, local or central. Regional rehabilitation consultants have been appointed to four of the main geographical areas, to give help and to co-ordinate the activities and services of rehabilitation workers in those regions.

In the early stages of development of these local community resources, senior members of the Division pay frequent visits to the field to provide consultative assistance and advice. After these committees are established, occasional visits continue.

Adequate workshop facilities have been slow in developing, and this has imposed a limitation on certain aspects of the rehabilitation process. The Goodwill Enterprises for the Handicapped in Victoria has, however, recently increased its facilities and staff; with Government financial assistance, this organization has provided assessment and training services for certain special categories of the handicapped in Victoria and throughout the Province. The Rehabilitation Foundation Workshop in Vancouver has also provided a similar type of service in Vancouver; negotiations have been under way toward giving that organization also financial help, provided its services can be expanded to meet the growing needs.

Activities of the Division during the past year may be summarized as follows:—

(*a*) The organization of local facilities for handling of rehabilitation casework was accomplished by

(1) combining and co-ordinating existing local community resources such as Health, Welfare, Canadian Manpower, and (where available) Mental Health Services;

(2) providing consultation and demonstration in areas where there is a desire to develop local committees;

(3) providing additional consultative assistance to those committees already formed, and attending their meetings on a periodic basis for this purpose;

(4) assisting in the development of local resources in the fields of physical treatment;
prosthetics;
education;
vocational training in sheltered workshops, in vocational schools, in technical schools, in private training-schools;

(5) assisting hospitals to develop their own rehabilition units;

(6) taking part in the education of medical, pharmaceutical, and nursing students in the rehabilitation field at university level, and also of social workers and school counsellors.

(*b*) The Division continued to administer the terms of the Federal-Provincial Agreement respecting the vocational rehabilitation of disabled persons

and to interpret the Agreement to the community. The Division also provided consultative assistance to the Department of Education in operating certain parts of its training programmes, and assisted in co-ordinating the activities of the various Government departments involved in the rehabilitation programme—Health, Mental Health, Social Welfare, and Labour.

Members of the Division have continued to serve in an advisory capacity on the boards of most of the Provincial community organizations. They also have provided assistance in planning standards for sheltered workshops and for their development as assessment and training facilities for handicapped persons.

PERITONEAL DIALYSIS

A few patients were still being maintained on a programme of peritoneal dialysis within their own homes. This programme continued to be supported by Government funds and is administered by the Division.

Dialysis is a necessary procedure to maintain life in these patients, and will continue until such time as renal transplantation becomes a practical possibility.

THALIDOMIDE DEFORMITIES

Though only six children with thalidomide deformities remained as responsibilities of the Province, the Government financial commitments have risen sharply, partly owing to the increased needs of growing children and partly to the need for sending two of them outside the Province for special services not available locally.

CASE LOAD OF THE DIVISION OF REHABILITATION SERVICES

Case load at January 1, 1966		653
Cases reopened	7	
New cases referred to local rehabilitation committees	286	
Cases referred from other sources	572	
Total cases considered for rehabilitation services, January 1 to December 31, 1966		865
Total		1,518

DISPOSAL

Cases closed, January 1 to December 31, 1966—		
Rehabilitation	101	
Not rehabilitated	49	
Total cases closed		150
Cases assessed and rejected as not capable of vocational rehabilitation		83
Cases under training at December 31, 1966		112
Cases currently under assessment or receiving rehabilitation service		1,173
Total		1,518

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