

Annual report of the Department of Public Health and the Central Board of Health / South Australia.

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SOUTH AUSTRALIA

ANNUAL REPORT

OF THE

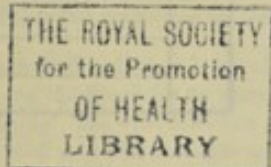
Department of Public Health

AND THE

Central Board of Health

FOR THE

Year ended 31st December, 1959



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THE PUBLIC HEALTH

Annual Report of the Department of Public Health and the Central Board of Health to the Minister of Health (Hon. Sir Alexander Lyell McEwin, K.B.E., M.L.C.)

SIR—We have the honour to submit the report for the Department of Public Health and the Central Board of Health for the year ended 31st December, 1959. The report is divided into the following sections :—

1. Staff and administration.
2. Public Health Supervision.
3. School Health Services.
4. Poliomyelitis Services.
5. Tuberculosis Services.
6. Summary and comments.

Sections 2, 3, 4 and 5 deal with particular sections of the Department and are based on reports received from the officers in charge, namely, the Principal Medical Officer (Public Health), the Principal Medical Officer for Schools, the Principal Medical Officer (Poliomyelitis), and the Director of Tuberculosis.

1. STAFF AND ADMINISTRATION.

Personnel of the Board.—During the year the constitution of the Board was as follows :—

Chairman—Albert Ray Southwood, C.M.G., E.D., M.D., M.S., M.R.C.P., F.R.A.C.P., F.R.S.H.

Chairman (15th June, 1959)—Philip Scott Woodruff, M.D., B.S., D.T.M. & H., M.R.A.C.P.

Members appointed by the Governor—

John Burton Cleland, C.B.E., M.D.Ch.M., F.R.A.C.P.

George Hugh McQueen, M.B., B.S., D.P.H., D.T.M., F.R.S.H., F.R.S.T.M. & H.

Member elected by the metropolitan local boards—

Arthur Roy Burnell, J.P., F.A.S.A.

Member elected by other local boards—

Alfred Bertram Cox, J.P., F.A.S.A., F.C.I.S.

Secretary—Richard Leonard Paech, A.U.A.

In May, 1959 the Secretary, Mr. R. L. Paech was appointed Secretary, Police Commissioner's Department and the Chief Clerk, Mr. H. N. Jones acted as Secretary for the remainder of the year.

Staff of the Department.—In addition to the Director General of Public Health (Dr. P. S. Woodruff) the principal staff of the Department at 31st December, 1959 comprised the Principal Medical Officer (Public Health) (Dr. G. H. McQueen), the Principal Medical Officer for Schools (Dr. Marjorie P. Casley Smith), the Principal Medical Officer (Poliomyelitis) (Dr. R. R. Horton), the Director of Tuberculosis (Dr. T. G. Paxon), and the Acting Secretary, (Mr. H. N. Jones). There was an average of 170 officers and employees on the staff throughout the year.

Staff Changes.—In May, Dr. A. R. Southwood retired as Head of the Department and Chairman of the Central Board of Health. He led the Department and the Board for 28 years during a period of extraordinary development, both in South Australian affairs and in medicine. The wide activities and interests of the Department in safeguarding the health of the State are due in no small measure to his foresight and influence. The Board takes this opportunity of paying tribute and expressing gratitude to Dr. Southwood for wise and expert guidance for so many years.

The Director of Tuberculosis, Dr. P. S. Woodruff, was appointed vice Dr. Southwood. Dr. T. G. Paxon, formerly Consultant Physician, Thoracic Annex at Cairns, was appointed Director of Tuberculosis for South Australia in November, 1959.

"Good Health".—Publication of the Department's quarterly bulletin "Good Health" was continued during the year.

The April issue dealt mainly with accidents and antidotes, poisonous and venomous fish, and the use of television.

The July issue contained a foreword by the Minister of Health and dealt in general with some aspects of the prevention of illness.

In the Spring book, issued in October, 1959, articles were printed on the prevention of dental caries and the aims of the School Dental Service, on food additives, food hygiene in the home, and the protection of food supplies.

The National Health and Medical Research Council and Committees.—The 47th Session of the National Health and Medical Research Council and Committees was held in Adelaide in May, 1959, and Dr. A. R. Southwood attended the meetings as South Australian representative for the last time prior to his retirement as Director General of Public Health. At this meeting the Hon. the Minister of Health, the Chairman of the Council, and the Chairman of the Medical Research Advisory Committee all paid special tribute to Dr. Southwood and expressed the sentiments of members at losing the only remaining original member of the Council.

Dr. P. S. Woodruff, as the new representative for South Australia, attended the 48th Session of the Council held in Sydney in October.

The Principal Medical Officer (Public Health) (Dr. G. H. McQueen) attended two meetings of the Council's Industrial Hygiene Committee.

The Pharmaceutical Inspector (Mr. R. C. McCarthy) attended two meetings of the Food Standards Committee and two meetings of the Poisons Schedules Committee held during the year. Both Committees are sub-committees of the Council's Public Health Committee.

2. PUBLIC HEALTH SUPERVISION

(a) STAFF

The professional and sub-professional staff of the Public Health Supervision Section of the Department of Public Health at the end of 1959 consisted of:—

- One Principal Medical Officer.
- Two District Medical Officers.
- Two Part-time District Medical Officers.
- One Chief Inspector.
- Nine Inspectors.
- One Nurse Inspector.
- Fifteen Part-time Inspectors.
- One Pharmaceutical Inspector.
- One Biophysicist.

During the year, Dr. H. F. Hustler was transferred from the position of medical officer in the Department of Public Health to medical officer in the Children's Welfare and Public Relief Department. Dr. Hustler was the first full-time medical officer appointed to the permanent staff of the Department of Public Health and he held that position from April, 1946 until he was transferred in April, 1959. His place was taken by Dr. M. Zeville. Dr. Zeville was appointed a medical officer in the Poliomyelitis Section of the Department of Public Health in September, 1957 and he remained with that Section until he was transferred to the Public Health Supervision Section in June, 1959. He resigned from the South Australian Public Service in December, 1959 to take a position in Vietnam with the World Health Organisation as a Regional Adviser.

Mr. S. R. Stevenson was transferred from the Tuberculosis Section of the Department of Public Health in January, 1959 and Mr. I. W. Darby was appointed from outside the Service in February, 1959 to fill two newly-created positions for inspectors appointed under the Health Act and Food and Drugs Act.

Mr. Stevenson was later transferred to the Land Tax Department and his place was taken in December, 1959 by Mr. R. E. Marks, who was appointed from outside the Service.

During the year the Principal Medical Officer of the Section (Dr. G. H. McQueen) was elected Chairman of the Board of Examiners in South Australia of the Royal Society of Health and the Chief Inspector (Mr. D. J. Wilson) was appointed Lecturer in Public Health Inspection at the Institute of Technology.

(b) VITAL STATISTICS

The following particulars for 1959 have been supplied by the Deputy Commonwealth Statistician. Some figures are subject to slight revision. Details for 1958 are shown in parentheses.

Population.—The estimated mean population for the State in 1959 was 921,042 (895,267).

Births.—The number of births registered during 1959 totalled 20,372 (20,047). The number of registrations during each of the last ten years has been a record, commencing with 17,306 in 1950. The birth rate per 1,000 mean population was 22·12 (22·35).

A period of 42 days after birth is permitted for registration and the number of births registered in a year therefore differs from the number of births actually occurring during the year. In 1958 births registered totalled 20,047 while 19,844 births actually occurred during that year.

Sexes of Births.—The masculinity ratio, i.e. the ratio of male births to female births, does not vary greatly from year to year. The 1959 figure of 102·77 was unusually low being the lowest recorded since 1936 when the ratio was 102·43.

Deaths Registered.—A total of 7,943 deaths registered during 1959 represents a new record, the previous record being 7,743 in 1958. However the death rate decreased slightly to 8·62 (8·63).

Infantile Mortality.—Infant deaths during 1959 totalled 422 (449) and the infantile mortality rate was calculated to be 20·71 (22·39). The lowest rate recorded in South Australia was 19·88 in 1956.

There were 286 (279) deaths of children under one month and 136 (170) deaths of children from one month to one year.

The number of infants under one year of age dying from certain causes during the last five years are compared in the following table:—

TABLE 1.—CAUSES OF INFANT DEATHS

Cause	1955	1956	1957	1958	1959
	No.	No.	No.	No.	No.
Diarrhoea	24	5	15	35	7
Congenital Malformations	81	71	92	85	72
Prematurity	90	99	76	74	69
Injury at birth	38	32	51	50	42
Other diseases peculiar to early infancy	82	77	82	83	107*
Cerebro-spinal Meningitis	1	—	1	—	1
Meningitis	4	5	8	5	6
Whooping Cough	2	2	—	1	—
Pneumonia	54	35	38	48	44
Hernia and Intestinal obstruction	5	2	4	3	2
External causes	18	7	9	18	19
All other causes	32	42	27	47	53
Total	431	377	403	449	422

* This figure includes—Postnatal asphyxia and atelectasis 58; ill-defined conditions of early infancy 16; neonatal disorders arising from maternal disease during pregnancy 15; haemolytic disease of the new born 14; haemorrhagic disease of new born 2; umbilical sepsis 2.

Still Births.—These numbered 281 (240). They are not included in births or deaths figures.

Marriages.—The number of marriages solemnized was 6,614 (6,505). The rate per 1,000 of the mean population was 7·18 (7·25).

Summary.—The following table shows the number of births, deaths and marriages, the rates per 1,000 of mean population, the number of infantile deaths and the infantile death rate per 1,000 live births from 1955 to 1959.

TABLE 2

Period	Births Registered		Marriages		Deaths Registered			
					Total		Infants	
Year—	No.	Rate (a)	No.	Rate (a)	No.	Rate (a)	No.	Rate (b)
1955	18,494	22·55	6,226	7·59	7,536	9·19	431	23·30
1956	18,964	22·35	6,277	7·39	7,593	8·95	377	19·88
1957	19,536	22·35	6,581	7·53	7,576	8·67	403	20·63
1958	20,047	22·35	6,505	7·25	7,743	8·63	449	22·39
1959	20,372	22·12	6,614	7·18	7,943	8·62	422	20·71

(a) Per 1,000 of Mean Population.

(b) Per 1,000 Live Births.

(c) LEGISLATION

Amendments to Acts.—Section 123 of the Health Act 1935 was amended to give local boards of health more control over drainage, ventilation and sanitary facilities proposed for new buildings and buildings to be altered.

No other Acts administered by the Central Board or the Department of Public Health were amended during the year.

Regulations under the Health Act.—No Regulations under the Health Act were made.

Regulations under the Food and Drugs Act.—A number of uniform standards recommended by the Food Standards Committee of the National Health and Medical Research Council were adopted and came into force during the year. They dealt with cocoa and chocolate, sorbic acid in cheese, canned meat, canned fish, margarine, honey, spices, dried vegetables and coffee.

Regulations were also made dealing with the packaging and labelling of prepacked meat, milk in sealable containers and poisonous residues on fruit and vegetables.

Calcium carbimide was restricted to prescription.

Regulations under the Dangerous Drugs Act.—Additional drugs, as recommended by the World Health Organization were brought under control.

(d) CONTROL OF INFECTIOUS AND NOTIFIABLE DISEASES

Statistics.—Infectious and notifiable diseases listed in the Second and Third Schedules of the Health Act are reported to local boards of health and the Central Board of Health. Those notified in the years 1957, 1958 and 1959 are shown in Table No. 3:—

TABLE 3

Infectious Diseases	Cases			Deaths		
	1957	1958	1959	1957	1958	1959
Acute infective encephalitis	2	7	7	4	2	7
Amoebiasis	1	2	2	—	—	2
Diphtheria	4	2	16	1	—	1
Diarrhoea, infantile infective	—	13	4	—	—	—
Dysentery, bacillary	50	57	61	2	2	3
Influenza in epidemic form	1,199	4	1,163	35	2	99
Leprosy	1	—	—	—	—	—
Malaria	—	—	1	—	—	—
Meningococcal infection	5	5	7	2	—	3
Ornithosis	1	6	1	—	—	—
Paratyphoid fever	1	3	—	—	—	—
Poliomyelitis	16	10	1	1	1	1
Puerperal pyrexia	5	3	2	—	—	—
Salmonella infection	19	59	45	—	4	1
Scarlet Fever	268	133	232	—	—	—
Trachoma	—	—	1	—	—	—
Tuberculosis, pulmonary	239	269	240	33	57	42
Tuberculosis, other forms	26	33	43	6	4	3
Typhoid fever	2	3	7	—	—	—
Notifiable Diseases	Cases			Deaths		
	1957	1958	1959	1957	1958	1959
Acute rheumatism	29	8	8	—	—	—
Brucellosis	2	1	1	—	—	—
Chorea (St. Vitus)	—	1	1	—	—	—
Erythema nodosum	4	1	—	—	—	—
Encephalitis following another disease	4	4	4	—	—	1
Hydatid disease	2	4	—	—	—	—
Infective hepatitis	258	307	749	3	5	5
Lead poisoning	3	—	2	—	—	—
Ophthalmia	4	—	1	—	—	—
Rubella	1,284	271	87	—	1	—
Tetanus	15	6	6	4	6	4

In comparison with 1958 an increased number of notifications were received of the following diseases; diphtheria, bacillary dysentery, influenza, meningococcal infection, scarlet fever, infective hepatitis, typhoid, and lead poisoning. Malaria and trachoma were each reported once. Fewer notifications were received of infantile infective diarrhoea, ornithosis, paratyphoid, poliomyelitis, salmonella infection and rubella.

Diphtheria.—Two outbreaks of diphtheria occurred. In the first, eight persons were affected and one died. Toxigenic *C. diphtheriae* with characteristics resembling the Gravis variety were isolated from seven. Three had been given initial immunization courses of injections against diphtheria when infants. The others had not been immunized.

In the second outbreak eight persons were affected, one seriously, the others mildly. Seven strains of toxigenic *C. diphtheriae* were isolated; two of the Mitis variety and five of the Gravis. Those with the Gravis variety were affected mildly and had never been immunized artificially. It was doubtful whether the others had been immunized previously.

Surveys indicated a significant percentage of non-immunized persons within the two areas concerned and special immunization projects were carried out by local health authorities concerned.

Typhoid.—Seven cases of typhoid and typhoid carriers were reported during the year. These occurred in three unrelated groups. Organisms from the two patients in the first group were Type "E 1". Organisms from two in the second group did not belong to any known type. Organisms from two in the third group were Type "C 1". Organisms were not recovered from the third patient in this group. The source of infection in the second group was a carrier who was admitted to hospital. An abnormal gall bladder containing typhoid organisms was removed. Subsequent examinations failed to reveal any typhoid organisms in the patients' faeces. No source of infection was found for the other two groups.

Infective Hepatitis.—There was also a large increase in the number of persons reported with infective hepatitis from all parts of the State. The incidence was greatest during summer and autumn.

Rubella.—A marked decrease occurred in the number of notifications of rubella received for the year.

Influenza.—This disease is reported when local boards decide that it is occurring in epidemic form within their districts.

Notifications were received during May, June, July and August only.

All deaths from influenza are recorded irrespective of whether the disease is being reported at the time as an infectious disease and therefore bear no true relationship to the incidence.

Vaccination with polyvalent influenza virus vaccine was provided for members of the Department of Public Health and some other Departments.

Poliomyelitis.—Poliomyelitis incidence was the lowest since 1943. Details of the Department's control of this disease are given later in the report of the Section dealing with Poliomyelitis.

Acute Infective Encephalitis.—Acute Infective Encephalitis unrelated to other diseases occurred during the early part of the year. No infective agent and no apparent sources of infection were found in those cases investigated. One of the reported cases died. The other six deaths recorded were patients who were not reported as encephalitis prior to their deaths. A herpes simplex virus was recovered from one of these patients.

Tetanus.—Of the seven cases of tetanus reported six had not been immunized against tetanus. No information was obtained about the seventh. None of the six had received anti-tetanus serum prior to the onset of symptoms.

Three of the reported patients died. The fourth death recorded was not reported as tetanus.

As indicated in Table No. 3, the number of cases of tetanus reported each year is low, but the proportion of deaths to cases remains high.

Immunization against tetanus is simple and effective but because the disease does not spread in epidemic form its control is of more importance to the individual than to the community.

Tuberculosis.—Total deaths from, and incidence and death rates of tuberculosis all decreased. The incidence rate fell from 33.7 in 1958 to 31.0 per 100,000 and the death rate fell from 6.7 in 1958 to 4.9 per 100,000.

More details of the work of the Department in controlling tuberculosis are given in the report of the section dealing with tuberculosis.

Immunization.—Returns received indicated that local boards of health immunized 1,824 children against diphtheria toxoid, four against whooping cough with pertussis vaccine alone, 43 against diphtheria and whooping cough with combined diphtheria and whooping cough antigen, 10,929 against diphtheria and tetanus with combined diphtheria and tetanus antigen, 2,699 against tetanus with tetanus toxoid, and 8,722 against diphtheria, whooping cough and tetanus with triple antigen.

This makes a total of 24,221. Of these 93 were children in "out-back" areas who were immunized by a medical officer of the Department of Public Health during visits to areas outside the control of local health authorities.

These figures do not include those children immunized by medical practitioners in their own practices.

(e) CONTROL OF VENEREAL DISEASES

During 1959, £2,215 was spent on venereal disease investigation and treatment. This amount represents mainly the cost of bacteriological and serological tests.

The majority of these were done for private medical practitioners. During the year 67 patients were investigated at the venereal diseases investigation clinic for females at the Royal Adelaide Hospital.

Further investigations are carried out to find the source of infection of any infected females and any they may have infected.

(f) SUPERVISION OF ENVIRONMENTAL SANITATION

Officers of the Public Health Supervision Section of the Department are responsible to the Central Board of Health for ensuring that those provisions of the Health Act designed to keep the State healthy are carried out. They are also responsible to the Central Board of Health for enforcing the requirements of the Food and Drugs Act throughout the State.

In areas where there are local health authorities these duties are the responsibility of the local authorities concerned and their officers. The Central Board and officers of the Section have a supervisory and advisory function.

Each health inspector of the Section has a number of local board areas to inspect and each district medical officer has an area of the State that is his responsibility. Routine inspections of each local board area are done by the inspector concerned who usually spends a week in the area inspecting as many places of public health interest as possible in the time available. He is usually accompanied by either the medical officer of health or the health inspector for the local board concerned. Each routine inspection is then followed later by a health survey by a district medical officer and inspector of the Section.

It is the aim of the Department to do a routine inspection in each local board area once a year. There are 141 local board areas and during 1959 it was possible to inspect 82 of them. Where a breach of the Health Act or Food and Drugs Act is found, the person responsible is informed. An explanation of why the condition is injurious to the health of the district and the dangers that may be associated with the condition if allowed to persist are usually given to the person responsible. The local board is notified of the inspector's report and the local board concerned may then serve a notice on the person responsible to amend the condition.

If at a subsequent inspection the condition is found to be still present, the Central Board may recommend that the person responsible be prosecuted under the Act concerned by the local board or it may institute proceedings itself.

Routine inspections were followed in 54 areas by health surveys by the district medical officer and health inspector concerned.

The number of routine inspections and health surveys made of local board areas was less in 1959 than in 1958. There were a number of reasons for the reduction.

One of the Section's experienced district medical officers left the Department and was not replaced till three months later by a medical officer who, though highly qualified in other respects, had had little experience in district health work in South Australia.

The number of routine inspections had to be reduced to enable the Section to cope with increased work for which the Central Board of Health or the Department of Public Health is directly responsible.

This work included supervision of increased numbers of new septic tank sewage treatment installations and increased responsibilities for those already installed and inspections of land subdivisions submitted to the Town Planner for approval. Supervision of septic tank sewage treatment installations is referred to later in this report.

During the year the Town Planner submitted to the Department of Public Health 36 proposed subdivisions of land into building allotments. He requested that each be inspected by officers of the Department with the idea of informing him of any likelihood of conditions arising that would become nuisances or injurious to the health of people living in the area if the subdivisions were proceeded with as proposed. Most of the subdivisions were in areas without reticulated water supplies or sewerage disposal systems.

In many it was unlikely that water supplies and sewerage would be available for many years.

In some cases it was necessary to inform the Town Planner that nuisances would probably arise if sewage and sullage water had to be disposed of within the area of the proposed allotments.

Some idea of the approximate area considered necessary was given in each case.

Other projects of special interest included investigation of conditions at various kinds of child minding establishments, investigation of environmental conditions associated with each case of accidental poisoning admitted to the Adelaide Children's Hospital, investigation of the increasing number of flies in the Metropolitan Area and in particular the relationship of manure storage to fly breeding, investigation of conditions at slaughterhouses outside the Metropolitan Area where meat is prepared for consumption within the Metropolitan Area, investigation of lead in crayons and glazes on food containers, investigation of waste water disposal at Murray Bridge, investigation of bacteria of public health significance in public swimming pools.

Parts of the State where local government does not exist are visited by district medical officers and inspectors of the Section. Routine health surveys are done and immunization and urgent medical, surgical and dental treatment may be given by the medical officer in places where local medical or dental practitioners are not available.

Included among other Acts administered by the Department of Public Health are the Bread Act and Bakehouses Registration Act. Officers of the Section during routine inspections also inspect bakehouses and bakers' shops to ensure that the provisions of these Acts are put into operation.

(g) REPORT OF THE DISTRICT MEDICAL OFFICER FOR THE NORTHERN AND WESTERN DISTRICTS

Inspection and Surveys.—During the year inspections were made of 28 local board areas by Central Board of Health inspectors and subsequent follow-up surveys with the district medical officer were made.

Flies.—There has been a considerable improvement in the position. A few offenders were prosecuted for fly breeding, but dry weather for the year has kept numbers low, breeding places usually drying out too fast to produce great numbers of flies.

Proper storage of manure for market gardens is urgently required.

The increase in fly population in recent years is the result of several factors, not the least of which is the upset of the natural balance of insects which normally control flies brought about by the wide use of insecticides. The medical officer for the area attended a conference in Canberra on resistance to insecticides and one of the conclusions reached is that biological control and the prevention of breeding places must replace the routine use of insecticides.

Water Supplies for Small Towns.—Some progress has been made since last year.

Oodnadatta.—Water Supply has been handed over from the Commonwealth Railways to the Engineering and Water Supply Department with an immediate improvement in supply to the town.

Marree.—A supply from the Frome sands is being investigated.

Coober Pedy.—The Mines Department has made a thorough assessment of possibilities and several alternative recommendations, and these are being followed up. A most interesting report has been made.

Andamooka.—Local action has had good results and further improvement is expected.

On the other hand no action has been taken along the railway line to Broken Hill and no improvement has been made to existing very difficult conditions. The main reason is that ample rains have meant that interest has been lost until the next local drought.

Abattoirs.—The storage of paunch contents and manure has been a matter of great concern in the past, and probably the most prolific source of fly breeding in the State. During the year after conferences with this Department, the Metropolitan and Export Abattoirs Board installed extensive improvements in this process and the trouble has been practically eliminated. Further extensions to the improvements have been proposed.

It must be realised that while fly breeding must be controlled this Department does not wish to deprive primary producers of the use of manures of animal origin. The new lands being brought so extensively into production to feed Adelaide's expanding population are grossly deficient in humus content, and this must be built up. Prohibition of use or destruction of manures would be economic folly and it is our aim to avoid this but require storage in such a way as to prevent fly breeding or offense as far as possible.

(h) REPORT OF THE DISTRICT MEDICAL OFFICER FOR THE SOUTH EASTERN AND UPPER MURRAY DISTRICTS

Inspections and Surveys.—Routine "follow-up" health surveys were interrupted by a change to staff within the Section and a rearrangement of the districts. However 29 local board areas were visited in the following parts of the State :—

West Coast	9
Upper Murray	8
Adelaide Hills	4
South East	8

Conditions generally have been maintained satisfactorily but certain breaches relevant to the dry season were prevalent, viz., feeding uncooked sheep carcasses to swine, killing in open paddocks and unlicensed premises and disposal of carcasses in unsatisfactory manner. There are still isolated food premises and slaughterhouses particularly in the South-East that require careful supervision due to poor structure and faulty management.

Epidemiology.—A widespread outbreak of salmonella food poisoning in Port Lincoln was investigated. The causative agent was proved to be *S. typhi murium* and the vehicle of infection cold roast duck. Several possible sources of infection were followed up but nothing conclusive was found.

A food handlers seminar was later held in Port Lincoln along the lines of those previously held in the Upper Murray.

Several Local Government Association meetings were attended and they continue to serve a useful place in liaison between Central and local health authorities.

Sanitation.—Hospital sanitation is now being followed up in country areas and this has resulted in several instances being found where conditions for spread of infection were present. Conditions found at the Barmera Hospital in conjunction with pollution of Lake Bonney necessitated considerable alterations to existing plumbing and drainage.

The sewerage of country towns has commenced with Port Lincoln and Naracorte. However, many other country towns have pressing problems relating to disposal of liquid wastes and much interim action is required.

(i) SUPERVISION OF FOOD AND DRUGS SOLD IN SOUTH AUSTRALIA

Routine Supervision Surveys.—The Food and Drugs Act requires the Central Board of Health and local and county boards of health to ensure that food and drugs are sold in a "pure and genuine condition". For this purpose officers of the Public Health Supervision Section of the Department of Public Health and local and county boards are appointed inspectors under the Food and Drugs Act.

During routine inspections and health surveys by these officers, places where food and drugs are manufactured, produced or prepared for sale are inspected. Places where they are sold are inspected and, when considered necessary, samples are taken and submitted to the Government Analyst for analysis. Table No. 4 shows the results of analyses carried out during 1959.

In the Metropolitan Area, the Metropolitan County Board has taken over from health authorities in the Area all powers, duties and liabilities imposed on them by the Health Act and Food and Drugs Act in respect of food and drugs.

During the year routine surveys of food and drugs for sale were carried out by officers of the Section in 82 local authority areas and these were followed by "follow-up" surveys in the majority of areas.

These included seven surveys in local authority areas within the Metropolitan County Board Area and two "follow-up" surveys.

TABLE 4.—RESULTS OF ANALYSES OF FOOD AND DRUGS FOR 1959

Article	Number Submitted	Not up to Standard or Incorrectly Labelled
Aerated waters	4	—
Bread	18	5
Butter	7	—
Cheese	25	2
Chocolate	1	—
Coffee	8	—
Cream	10	—
Custard Powder	2	—
Essence	6	—
Fish, tinned	4	3
Fruit, juice and syrup	3	1
Milk	1,091	32
Milk, tinned	5	—
Minced meat and sausage	52	7
Oils, edible	9	3
Pickles	1	—
Seasonings	21	—
Sugar	1	1
Temperance drinks	8	—
Vinegar	1	1
Whisky	2	2
Wine	2	1

Reconstituted Milk.—Regulation 45, sub paragraph 24 of the Food and Drugs Act deals with reconstituted milk. Clause (f) 1 and 2 of the sub paragraph enables the Central Board of Health to issue permits to manufacturers of reconstituted milk to label it "Pasteurized Milk" and sell it as such for any four consecutive months in any year. The Central Board of Health may also specify what ingredients shall be used in the manufacture of such reconstituted milk.

In accordance with the Regulations the Central Board of Health issued permits to two companies to manufacture reconstituted milk from milk, milk products and water, to label it "Pasteurized Milk" and to sell it as such.

The returns from these companies show that from the 15th February to 24th May, 1959 they sold 276,295 gallons of reconstituted milk as pasteurized milk. The ingredients used in its manufacture were 39,375 lb. of dried skim milk powder, 34,162 gallons of water, and 1,673 lb. of fresh or deep frozen cream.

Four other companies were also given permits by the Central Board of Health during 1959 to manufacture reconstituted milk from milk and milk products, and to sell it as pasteurized milk.

Returns from these companies show that 6,332 lb. of dried skim milk was used in the preparation, and that 291,600 gallons of reconstituted milk were sold as pasteurized milk.

This makes a total of 567,895 gallons of reconstituted milk which was sold as pasteurized milk, in South Australia during 1959, under permits issued by the Central Board of Health.

Before permits were granted manufacturers' premises, and equipment to be used in the reconstitution of milk were inspected and in each case considered to be suitable by officers of the Central Board of Health.

Glass Washing.—Draft Regulations to provide adequate facilities with a double bowl sink as the minimum, were prepared and circulated to the trade; the proposals were not finalized at the end of the year.

Soft Drinks.—Draft Regulations dealing with soft drinks were prepared for submission to the Food Standards Committee for consideration as a basis for uniform standards.

Uniform Standards.—Further draft uniform standards were considered. Considerable progress is now being made in this matter in that a number have been adopted and others recommended for adoption. It is pleasing to note that South Australia is not lagging in the adoption of these standards.

Kangaroo and Buffalo Meat.—Considerable interest was aroused by the proposed sale of kangaroo and buffalo meat for human consumption.

These types of meats are included in the definition of "Meat" in the Food and Drugs Regulations and it appears that there is no restriction to the sale of such meats in South Australia if they are free of disease, wholesome and fit for human consumption, if they correspond with the description on any labels they bear, if they are the types of meat the person selling them claims them to be and actually are the types requested by the purchaser.

Uniform Labelling of Food and Drugs.—All local health authorities have been requested by the Central Board of Health to refer all inquiries about labelling food and drugs to the Central Board in order that interpretations of the Food and Drugs Regulations on labelling be uniform.

Food and Drugs Advisory Committee.—Two new members were appointed during the year; Mr. A. D. R. Marlow, Director of Chemistry, replaced Mr. R. J. Cowan, deceased and Dr. J. W. Dwyer, Officer of Health, City of Adelaide, replaced Dr. H. K. Fry when he retired.

(j) SUPERVISION OF SEPTIC TANK SEWAGE DISPOSAL SYSTEMS

Plans and specifications of septic tank sewage disposal systems are required by the Health Act to be submitted to and approved by the Central Board of Health before installations are commenced. Approvals are given on the recommendations of officers of the Public Health Supervision Section. All systems are inspected by officers of the Section before permits to use the systems are issued.

During 1959, 3,386 installations were approved and 2,890 permits were issued.

An amendment to Section 530 of the Local Government Act states briefly that when a council requires the installation of a bacteriolytic tank it may with the approval of the Central Board of Health require the installation of a tank suitable for the disposal of sludge and waste water in addition to sewage. Under this Section of the Local Government Act, Councils could previously require the installation of septic tank sewage disposal systems on premises within the districts. They may now require that the system installed be capable of dealing with all refuse that can be carried by water from each premises.

(k) SUPERVISION OF INDUSTRIAL HEALTH

Administration.—Industrial health problems referred to the Department by other Departments, local boards and industrial organizations were investigated and reports and recommendations were made by Officers of the Public Health Supervision Section.

Technical officers of the Department of Mines, the Department of Chemistry and the Institute of Medical and Veterinary Science have assisted with these investigations. Their help has been valuable and is appreciated.

The industrial health work of the Section is at present almost entirely confined to locating and eliminating conditions that are dangerous to the health of industrial workers, after some damage has been done.

It should be possible with an adequately staffed Section to detect and correct these conditions before damage has been caused. Prevention is always better than cure but until more staff is provided it will not be possible to do extensive industrial health surveys. Some additional assistance was provided when, towards the end of the year, a biophysicist was temporarily transferred from the Department of Mines to investigate the existence of hazards to health associated with the use of ionizing radiation. A survey of X-ray Machines in foot wear shops and of X-ray Machines used by this Department was done by this officer. The use of sources of ionizing radiation where they were known to exist in industry was also investigated together with all new sources brought into the State. A number of minor hazards were found to exist and were corrected.

Industrial Hygiene Committee.—The Principal Medical Officer attended two meetings of the Industrial Hygiene Committee of the National Health and Medical Research Council.

Industrial Safety Convention.—Officers of the Section attended an Industrial Safety Convention arranged by the Department of Labour and Industry. An address on "The Contribution of Medicine to Industrial Safety" to delegates to the Conventions and a demonstration of occupational diseases and means of prevention was arranged by officers of the Section.

Department of Mines Uranium Project.—Pre-employment and annual periodic medical examinations of persons employed on the uranium project of the Department of Mines were continued. During the year 175 medical examinations were completed in Adelaide. At Radium Hill and Port Pirie 387 medical examinations were completed. Clinical examinations were done by medical officers of the Public Health Supervision Section; periodic X-ray examinations were done at Radium Hill, Port Pirie and Adelaide by the X-ray units of the Department of Public Health; blood examinations at Adelaide were done at the Institute of Medical and Veterinary Science; and at Port Pirie and Radium Hill blood examinations were done by the mobile unit of the Institute of Medical and Veterinary Science.

Medical examinations, required by the Silicosis Committee, of employees of the Department of Mines working in places where there is a silicosis hazard, were also done.

Medical Examinations for Employment.—Medical examinations of applicants for permanent appointments in the Public Service are done by medical officers of the Public Health Section. In addition, medical examinations of persons, except teachers and railway employees, desiring to subscribe to the South Australian Superannuation Fund or in receipt of invalid pensions from the Fund are done by medical officers of the Section. A total of 504 of the above examinations were completed during 1959. These include medical examinations of applicants for positions in the State Bank and the South Australian School of Mines and for permits to visit reserves for aboriginals.

(I) HEALTH EDUCATION

Officers of the Public Health Supervision Section again contributed largely to the health education work of the Department.

"Good Health" and Newsletters.—Articles for each issue of the Departments magazine "Good Health" were written by Officers of the Section.

Each month a "Newsletter for Medical Officers of Health" was sent out by the Principal Medical Officer. A list of diseases notified to the Central Board of Health and local boards during the previous month is given in each letter. Other items of topical interest included the following:—

Health Act requirements for labelling and bottling kerosene; notes on diphtheria, typhoid fever and scarlet fever outbreaks during the year; human infection with round worms from cats and dogs; asphyxia from plastic bags; early notification of Births Act; smallpox; virus influenza; reconstituted milk; and a routine immunization programme for the guidance of local boards of health.

Royal Society of Health.—Examinations for diplomas and certificates of the Royal Society of Health are conducted by the Society's Board of Examiners in South Australia. Theoretical training of candidates in the Metropolitan Area is provided by the Institute of Technology.

Correspondence Courses are also arranged by the Technical Correspondence School of the Education Department. Material for the courses is prepared and the correcting of assignments is done by the Chief Inspector of the Section. Practical work required by the Royal Society of Health for candidates for its diplomas and certificates is arranged by officers of the Section.

At the last examinations of the Royal Society of Health in Adelaide 26 candidates sat for the Diploma of the Royal Society and four sat for the Meat and Other Foods Certificate. Of these 19 obtained the Diploma and four the Certificate.

World Health Day and National Health Week.—World Health Day was observed on 7th April. The theme chosen for 1959 was "Mental Illness and Mental Health in the World Today".

The object of World Health Day is to stimulate popular interest throughout the world in the chosen subject.

National Health Week was held from 18th to 28th October.

The theme adopted this year was "Clean Hands for Good Health".

Circulars, streamer pamphlets, and posters were distributed to local boards and others interested. The Education Department made special reference to Health Week in "Children's Hour" and included stories for children on clean hands and clean food. One local board arranged a series of lectures and demonstrations on clean food handling for food handlers in its district. Its efforts were rewarded by enthusiastic audiences.

Special Health Education Projects.—During the year officers of the Section took part in many special health education projects that were arranged either by the Department, by local boards, or by other organizations.

These included, Food Handlers Seminars, talks at Local Government Conferences and addresses to Agricultural Bureaux.

3. SCHOOL HEALTH SERVICES

STAFF

During the year the professional staff of the School Health Services consisted of the Principal Medical Officer for Schools, seven full-time and one part-time medical officers, six dental officers, nine nurses, six dental assistants, one part-time audiologist and two audiometrists. Several changes of staff occurred during the year, requiring replacements.

MEDICAL SERVICES

During the last few years there has been marked increase in the number of children examined in State schools. The following Table No. 5 sets out enrolments at primary and secondary schools for the years 1956-59, and the number of medical examinations of children in metropolitan and country areas during these years. These figures do not include the number of schools visited and children examined by local doctors on Eyre Peninsula acting on behalf of the Department. These are shown in Table 8.

TABLE 5

Year	ENROLMENTS			CHILDREN EXAMINED		
	Metropolitan	Country	Total	Metropolitan	Country	Total
1956.....	116,164	21,206	137,370	36,721	16,609	53,330
1957.....	121,401	24,234	145,635	38,318	14,005	52,323
1958.....	126,185	27,727	153,912	41,498	15,739	57,237
1959.....	129,984	32,361	162,345	47,492	19,245	66,737

The following table (Table 6) shows the number of schools visited, children examined and defects noticed by medical officers of the School Health Services :—

TABLE 6

	Metropolitan	Country	Total
Schools visited	110	193	303
Children examined	47,492	19,245	66,737
Defects found—			
Vision (excluding spectacles)	3,712	1,470	5,182
Wearing spectacles.....	3,077	917	3,994
Hearing	684	252	936
Nose and throat	613	365	978
Teeth	9,286	4,677	13,963
Heart	271	127	398
Skin	676	281	957
Lungs	76	42	118
Allergies	1,620	813	2,433
Epilepsy.....	52	26	78
Deformities, postural	328	163	491
Deformities, foot	1,517	697	2,214
Other conditions (not classified)	4,048	2,190	6,238
Total defects recorded	25,960	12,020	37,980

To enable comparisons to be made with other years, Table 7 shows, for the last six years, the rates per 10,000 children examined of certain defects formally notified to parents.

TABLE 7.—DEFECTS NOTICED PER 10,000 CHILDREN EXAMINED

Year	Vision	Hearing	Nose and Throat	Teeth	Heart	Allergies	Epilepsy
1954	646	272	355	3,769	43	*	*
1955	691	252	256	3,136	38	*	*
1956	738	244	303	2,599	52	*	*
1957	622	180	231	3,009	48	315	5
1958	605	213	166	2,444	61	321	10
1959	776	140	146	2,092	60	364	12

* Not recorded

Notices were sent to the parents of 13,963 children needing dental attention. Children already under private dental supervision and children who were examined by departmental dentists are not included in these statistics.

Medical officers of the Department examined 47,492 children in 110 metropolitan schools and 19,245 children in 193 country schools during 1959. A larger staff will be necessary if all children are to receive their regular examinations in future.

Eyre Peninsula Scheme.—Doctors residing at five centres on Eyre Peninsula and at Port Augusta assisted the School Health Services by examining the children attending schools in their areas. Nine hundred and sixty one children attending eight schools were seen by them. The Department appreciates the work of the doctors who have been able to continue their work for us.

TABLE 8.—EYRE PENINSULA SCHEME

Schools visited	8
Children examined	961
Defects formally notified—	
Vision (excluding spectacles)	61
Wearing spectacles	37
Hearing	7
Nose and throat	40
Teeth	229
Heart	5
Skin	7
Lungs	3
Allergies	32
Epilepsy	2
Deformities, postural	4
Deformities, foot	4
Other conditions (not classified)	85
Total defects recorded	516

Audiometric Testing.—Audiometric testing was conducted in 100 State schools and in 34 kindergartens of the Kindergarten Union of S.A. Inc. A total of 15,779 children had pure-tone audiometer tests. These tests were carried out by medical officers, audiometrists and school nurses. Of the children tested, 892 (5.6 per cent) were found to have some hearing loss at the time of testing. Their parents were notified accordingly and arrangements were made for those not choosing private investigation to have where possible further tests in the sound-proof room of the Department, where frequently more satisfactory results were obtained. Statistics of these audiometric tests are shown in Table 9. These figures are independent of the figures in Table 6.

TABLE 9.—AUDIOMETRIC TESTS AT SCHOOLS

	Pre-School Kindergartens	Metropolitan Schools	Country Schools	Total
Schools visited	34	66	34	134
Children tested	1,622	12,955	1,202	15,779
Defects	55	642	195	892

The number of audiometric tests made in the sound-proof room of children referred by all officers was 1,848 as is shown in Table 10.

TABLE 10.—AUDIOMETRIC TESTS IN THE SOUND-PROOF ROOM

	Pre-School	Primary	Secondary	Student Teachers	Total
Children from the metropolitan area	121	1,308	108	—	1,537
Children from country areas	8	149	40	—	197
Leaving teaching scholars and students attending Teachers Colleges	—	—	—	114	114
	129	1,457	148	114	1,848

DEAFNESS GUIDANCE CLINIC

Attendances have steadily increased since the clinic was established in March, 1956. The total for the year 1957 was 713, for 1958 it was 996, and for 1959 1,049, of which 508 were initial attendances and 541 were attendances for retesting after treatment. Details are shown in Table 11. Apparent anomalies in the figures for retesting must be disregarded because many of the children retested during 1959 attended initially during 1956, 1957 and 1958.

Referrals to the Clinic.—The great majority of the cases were discovered by the School Health Services or by the audiometrists in the schools or kindergartens, but 136 came from elsewhere :— 52 children were brought directly by their parents ; 50 children were referred by medical practitioners ; 31 children were referred by officers of other Government Departments ; one child was referred by Townsend House School for the Deaf ; one child was referred by Colebrook Home ; one child was referred by Spastic Home ; one child was referred by Hearing Aid Centre.

TABLE 11.—ATTENDANCE AT THE DEAFNESS GUIDANCE CLINIC

INITIAL ATTENDANCES

	Pre-School	Primary	Secondary	Government Departments	Total
Metropolitan	35	324	40	28	427
Country	3	63	15	—	81
	38	387	55	28	508

Children referred to :—

	Pre-School	School Age	Government Departments	Total
General practitioners	16	298	2	316
Otologists	—	5	1	6
Adelaide Children's Hospital	—	23	—	23
Royal Adelaide Hospital	—	6	—	6
Re-testing without treatment	11	54	2	67
Discharged	11	56	23	90
	38	442	28	508

RETESTS

	Pre-School	School Age	Government Departments	Total
First retests	16	232	4	252
Subsequent retests	11	276	2	289
	27	508	6	541

Children referred to:—

	Pre-School	School Age	Government Departments	Total
First retests—				
General practitioners	6	111	—	170
Otologists	—	8	1	9
Adelaide Children's Hospital	3	7	—	10
Royal Adelaide Hospital	—	3	1	4
Re-testing without treatment	2	38	—	40
Discharged	4	66	2	72
	15	233	4	252
Subsequent retests—				
General practitioners	3	132	—	135
Otologists	—	5	—	5
Adelaide Children's Hospital	1	—	—	1
Royal Adelaide Hospital	—	4	1	5
Re-testing without treatment	7	53	1	61
Discharged	—	82	—	82
	11	276	2	289
	26	509	6	541

Infections in School Children.—The numbers of communicable diseases reported to teachers in State schools are shown in Table 12.

TABLE 12

Year	Diphtheria	Scarlet Fever	Measles	Rubella	Whooping Cough	Chicken Pox	Mumps	Polio-myelitis	Infective Hepatitis	Other Conditions
COMMUNICABLE DISEASES										
1955.....	11	215	1,114	452	264	1,696	2,207	43	93	205
1956.....	—	179	5,027	1,178	227	1,856	2,607	30	117	143
1957.....	1	184	499	1,496	97	2,195	1,556	3	26	83
1958.....	—	131	3,469	232	163	2,078	987	2	53	116
1959.....	2	154	943	110	39	1,948	2,374	—	110	106
COMMUNICABLE DISEASES PER 10,000 CHILDREN ENROLLED										
1955.....	0.8	16.9	87.8	35.6	20.8	133.7	173.5	3.3	7.3	15.9
1956.....	—	13.2	371.6	87.1	16.7	137.2	192.7	2.2	8.6	10.4
1957.....	0.1	12.6	34.3	102.7	6.7	150.7	106.8	0.2	1.8	5.7
1958.....	—	8.5	225.4	15.0	10.6	135.0	64.1	0.1	3.4	7.5
1959.....	0.1	9.4	58.0	6.7	2.4	119.9	146.2	—	6.7	6.5

The total number of these communicable diseases reported was 5,786. This is 1,445 less than in 1958, mainly due to a decrease in the number of cases of measles. There were no cases of poliomyelitis. Included in other conditions were seven cases of meningitis, three of tuberculosis, four of encephalitis, and fifty two of conjunctivitis.

Other Medical Examinations.—Eight hundred and ninety eight female and 704 male students entering or leaving the Teachers Colleges or attending State Schools as Leaving Teaching Scholars were medically examined in 1959. Teachers referred by the Education Department were seen before returning to duty from sick leave. All applications from teachers for invalidity pensions were considered, and, where necessary, the applicants were examined. During the year 397 teachers applying for permanent appointments, superannuation or temporary positions were examined. Children travelling interstate with sports teams were given a medical examination.

Health Lectures.—Four lectures a week in hygiene were given to groups of students attending the two Teachers Colleges and two lectures a week to two groups of temporary teachers. The lectures were given by medical officers and also by Physical Education Instructors of the Education Department. Twenty-five requests were received for speakers at metropolitan Mother's Clubs and twenty two were addressed in the country. This educational work is encouraged and regarded as important. The appointment of a health educator was requested earlier in the year to assist in this work.

Follow-up Work.—This was continued by the school nurses and 107 metropolitan schools were visited once. Of these, 15 schools had second checks made, when outstanding cases were further investigated and the parents were either visited or telephoned. Twelve homes were visited, help and advice being given by the nurse. In this way 88 out of 118 non co-operative parents contacted (74.5 per cent) were persuaded to follow the advice of the medical officer. The final assessment showed that in the 107 schools where follow-ups were done 80 per cent of the defect notices, excluding dental notices, had finally received attention. This result shows the benefit derived from follow-up work. The lack of a nurse free to do this work for a number of months, reduced the final result from 94.4 per cent in 1958 to 80 per cent this year.

Defect Notices Returned.—Under an arrangement approved by the British Medical Association, 2,481 forms were returned by doctors and specialists to whom children were taken following the discovery of defects. The co-operation received from many doctors and specialists is of great value to the School Health Services and I am very grateful for their help.

DENTAL SERVICES

In 1956 the policy was laid down to offer dental services to children where no permanent dental services are available. This policy has been maintained.

Early in the year six dental teams were on strength, and a Senior Dentist, Mr. M. L. Kranz, was appointed in March. As a result of sickness and resignation staff difficulties occurred, but throughout the year it was possible to maintain five dental units.

Children in six areas were examined and offered treatment during the year. These areas were :—

Eastern Eyre Peninsula	South-West
Far North	South
Murray Flats	Upper South-East

Eighty-one schools were visited, and the following table sets out the work performed during the year.

TABLE 13

Extractions.....	2,896
Fillings.....	9,624
X-rays and other treatments	2,137
Children examined	7,502
Visits for treatment	7,449
Number of patients completed	2,434

These figures show an average of 1.2 extractions and four fillings per child, and an average per dentist of :—

Extractions	579
Fillings.....	1,925
Other treatments	425
Children completed	487
Examinations	1,500

Children were advised of the importance of oral hygiene, and wherever possible talks were given and films shown to children and parents.

During the year two additional dental caravans were obtained. These were delivered in October and will enable treatment to be offered under better conditions, especially in the smaller outback areas where facilities for dentists working in the schools have been inadequate.

The policy of training twelve students in dentistry was continued. Two students graduated at the end of the year and were engaged for work at the commencement of the 1960 school year.

CONCLUSION

In the newer and larger schools the provision of medical examination rooms helps the work of the medical officers considerably. In other schools, Head Masters do all they can to assist, but accommodation designed for other purposes often makes medical examination difficult.

The great increase in the number of school children renders the aim of three medical examinations for each child in the primary school very difficult with the present staff. In the metropolitan area the policy of examining children three times whilst in the primary school has been achieved. All schools in the country, except in two small districts, have been examined during the past four years. These two districts will be visited early in 1960.

Thanks are due to the medical officers and school nurses who have worked so efficiently over the last six years. However, while this result is satisfactory, the rapidly increasing school population, together with increased numbers of teachers and teachers in training, will call for a larger staff. Much more educational work with the mothers, teachers and school children could then be achieved.

4. POLIOMYELITIS

Incidence.—During the year under review only one case of poliomyelitis was reported. The yearly cases reported to the Department of Public Health since the last epidemic started in May, 1949 appear in Table 14.

(NOTE.—Because a case was “reported” does not necessarily mean that it was, in fact, poliomyelitis).

TABLE 14.—REPORTED CASES OF POLIOMYELITIS IN SOUTH AUSTRALIA, 1949-1959.

Year.	Cases.			Deaths.		
	Metropolitan Area.	Other Districts.	Total.	Metropolitan Area.	Other Districts.	Total.
1949.....	490	90	580	15	5	20
1950.....	816	157	973	7	10	17
1951.....	1,012	479	1,491	39	23	62
1952.....	435	274	709	7	5	12
1953.....	287	111	398	11	10	21
1954.....	123	53	176	2	3	5
1955.....	110	72	182	5	1	6
1956.....	58	64	122	2	1	3
1957.....	5	11	16	1	—	1
1958.....	5	5	10	1	1	2
1959.....	1	—	1	—	—	—

The case reported in 1959 was a non-immunised girl of two years and ten months of age. She suffered paralysis of both legs and is still under treatment.

Since the start of the Salk programme on 28th June, 1956, all reports of suspected cases have been investigated as far as possible by the Principal Medical Officer (Poliomyelitis) and details have been sent to the Commonwealth Surveillance Committee which meets in Melbourne. The members of this specialist Committee are not otherwise concerned with the Salk programme and they make the final decision on whether a case should be accepted statistically as poliomyelitis in evaluating the efficacy of the “Salk” vaccine. Up to 31st December, 1957, the Committee accepted five South Australian cases as poliomyelitis occurring in immunized children, all within the age group 0-14 years. Particulars of the five cases were as follows :—

Cases 1, 2 and 3 developed poliomyelitis within a week of their first immunization injection and had been sick prior to the injection. It was obvious from the investigations that these three children were infected with poliomyelitis before the injection was given. It was not expected that the vaccine would prevent development of the disease in the circumstances. These three cases reasonably could be regarded as non-immunized subjects.

Case 4 had received one injection only. As no specimens for laboratory investigation were made available it was not possible to confirm, or exclude, the diagnosis of poliomyelitis. However, it was decided to accept the case for statistical purposes.

Case 5 was a child of six years who had received two injections. Again no specimens could be obtained and the diagnosis of poliomyelitis, while not proven, was accepted.

There were no cases of poliomyelitis in immunized children during the years ending 31st December, 1958 and 31st December, 1959.

From 1st July, 1956 to 31st December, 1959 the Committee accepted thirty-one (31) non-immunized children in the age group 0-14 years and thirty-four (34) non-immunized children over 15 years of age as cases of poliomyelitis. This means that in South Australia since 1st July, 1956, there have been sixty-five (65) accepted cases of poliomyelitis in non-immunized persons compared with only five cases in immunized persons, even if the diagnosis in the immunized children were accepted without the above reservations. The difference in the incidence of the disease in non-immunized and immunized subjects has been subject to statistical study with the conclusion that the “Salk” vaccine affords a very high degree of protection (Graydon, J. ; M.J.A., September 12th, 1959, page 370).

Poliomyelitis Immunization Injections.—The number of Salk injections given from the start of the programme on the 28th June, 1956 to 31st December, 1959 as shown in Table 15.

TABLE 15.—INJECTIONS GIVEN SINCE CAMPAIGN STARTED

28th June—31st December, 1956.....	223,979
1st January—31st December, 1957.....	401,683
1st January—31st December, 1958.....	266,164
1st January—31st December, 1959.....	306,463
	1,198,289

The classification of this total number of injections into first, second and third injections appears in Table 16. It is apparent in this table, that in the "Over 15 years" group the ratio of third to first injections is low. This may be explained by many of these applicants not being due (at 31st December, 1959) for their third injection.

TABLE 16.—INJECTIONS IN AGE GROUPS
SEPARATION OF FIRST, SECOND AND THIRD INJECTIONS

	0-14 years	Over 15 years	Total
First Injections.....	269,757	177,391	447,148
Second Injections.....	263,649	164,079	427,728
Third Injections.....	235,356	88,057	323,413
	768,762	429,527	1,198,289

With the progressively increasing number of persons being immunized, it is obvious that the level of demand for poliomyelitis immunization injections must fall to a lower level. This level ultimately should settle at a figure approximating the number of new births, plus child and adult immigration into South Australia. This ultimate level has not been reached as there still are eligible adults who have not applied.

As should be expected, the fall off in the number of injections given will occur first in the school-going age group. This may not be due to lack of response—on the contrary, it is more likely to arise from the high immunization rate in both school and pre-school age groups. As such a high proportion of school children are immunized, there is a small number only who would remain eligible. This high level of immunization in the school-age group should continue for several years because of the good response obtained in the pre-school group; as the children immunized at a pre-school age enter the school-age group it means less children in the latter group who require immunization. Table 17 shows the fairly steady demand from pre-school children and people over 15 years compared with the diminishing school-going age group. This table suggests that children becoming eligible at six months of age are applying for immunization and that there is a continuing demand from non-immunized adults whereas the ranks of eligible (i.e. non-immunized) school children are becoming depleted.

TABLE 17.—INJECTIONS GIVEN EACH QUARTER—IN AGE GROUPS
SHOWING CONSISTENT DEMAND IN "PRE-SCHOOL" AND "OVER 15 YEARS" WITH FALLING OFF IN "SCHOOL AGE" GROUP

Quarter Ending	Pre-School Age	School Age	Over 15 Years	Total
30th September, 1956.....	19,837	74,726	2,442	97,005
31st December, 1956.....	38,552	86,223	2,199	126,974
31st March, 1957.....	39,464	54,595	3,106	97,165
30th June, 1957.....	23,350	85,287	3,308	111,945
30th September, 1957.....	25,553	56,898	5,423	87,874
31st December, 1957.....	40,276	55,534	8,889	104,699
31st March, 1958.....	10,460	12,474	10,544	33,478
30th June, 1958.....	16,455	19,316	35,893	71,664
30th September, 1958.....	15,553	3,505	52,095	71,153
31st December, 1958.....	16,135	3,482	70,252	89,869
31st March, 1959.....	12,719	2,596	56,384	71,699
30th June, 1959.....	15,698	3,419	73,075	92,192
30th September, 1959.....	16,979	2,611	62,643	82,233
31st December, 1959.....	15,086	1,979	43,274	60,339
	306,117	462,645	429,527	1,198,289

Mobile Units.—The original four mobile units are still being worked full time; any fall off in the number of applicants will mean that less time will be spent in each centre and that all centres, particularly those in the country can be visited more often. Injection facilities are provided every week day in the metropolitan area with sufficient evening sessions to enable employed people to obtain their injections. There are always two units (and usually three) working in country areas to give country people as much opportunity as possible for poliomyelitis immunization. Areas from Port McDonnell in the south to Farina in the north and Fowlers Bay in the west are visited regularly by the mobile units and areas even more remote are immunized by co-operation with other services such as the Flying Doctor Organization. During the past three and a half years of the poliomyelitis immunization campaign, it has been possible—despite unavoidable mechanical breakdowns and sudden staff sickness—to maintain all programme schedules; the only cancellation which occurred arose from the non-arrival of vaccine due from the laboratories. Requests for mobile unit visits to very large industries have been met and due to close co-operation between management and the Poliomyelitis Services staff, injections have been given without any loss of production. In a very big and efficient industrial organization, two thousand five hundred injections were given in the one day without production loss. This brought the public comment from the personnel manager. "The Health Department today gave us quite a lesson in efficiency". ("Advertiser", 28-4-59).

When the poliomyelitis immunization programme first started it was essential that full time medical practitioners be employed to give the injections. With the public's ready acceptance of and subsequent confidence in the vaccine, the remarkable absence of any undesirable after-effects and the desire to keep the costs of the programme as low as possible (compatible with the best service) it was decided, during 1959, to employ trained nursing sisters to give injections. This trial of nursing sisters on mobile units is proving satisfactory and will mean a financial saving to the community of approximately £6,000 a year.

Quadruple Vaccine.—The Director of the Commonwealth Serum Laboratories has proposed that he should prepare and market a quadruple vaccine, for use in infancy, to give protection against poliomyelitis, diphtheria, tetanus and whooping cough; production for a field trial has started. As the quadruple vaccine will include a poliomyelitis immunization component it is relevant to this report on poliomyelitis.

At a meeting of the Executive Committee of the Australian Paediatric Association on October 9th, 1959, all members of the Committee were in favour of use of a quadruple vaccine provided that satisfactory results were obtained from the tests to be carried out by the Commonwealth Serum Laboratories and overseas. It was suggested that injection of quadruple vaccine should be given at three, four and five months of age and between 12 and 17 months of age, followed by a booster dose of combined polio-diphtheria-tetanus injection (C.P.D.T.) in the first year at school.

The matter of the distribution of the proposed quadruple vaccine has been considered by the Poliomyelitis and the Public Health Committees of the National Health and Medical Research Council and by the Council itself. A recommendation considered was, "that the inclusion of a poliomyelitis component in quadruple vaccine leaves no alternative but to submit these vaccines to the same conditions of distribution as now apply to C.S.L. poliomyelitis vaccine". The conditions of issue of the poliomyelitis vaccine (which is restricted to State Health authorities) were:—

(1) There should be an individual record for each person—recording the date, amount, route, site and batch number of each injection and the name of the person giving the injection.

(2) That the method of distribution of the vaccine should always be such to ensure that the conditions of handling and storage will conserve its potency. (The vaccine must be kept refrigerated; after 48 hours exposure to ordinary room temperatures it may become ineffective).

(3) That there should be an adequate system of medical follow-up of any reported cases of suspected poliomyelitis (in both immunized and non-immunized subjects) and that details of this investigation should be sent to the Commonwealth Surveillance Committee.

(4) That the Commonwealth would provide the vaccine free of cost to the States.

(5) That the States should bear the costs of the injections—implying that both the vaccine and the injection should be free of cost to the applicant.

The quadruple vaccine will affect mainly the immunization of infants as the recommendation is for children under two years of age only. When quadruple vaccine is released injection facilities should be available every month at each centre so that children may have the first injection immediately they reach three months of age and be able to continue the course at the proper time intervals. This need for facilities at every centre every month, together with the importance of preserving proper records and the potency of the vaccine obviously will present administrative difficulties particularly regarding country planning. Possible methods of distribution in South Australia are being discussed now.

Conferences.—On 21st September, 1959, the Principal Medical Officer (Poliomyelitis) attended a meeting, in Melbourne, of the "Committee on Epidemiology and Infectious Diseases" and on the 11th November, 1959 a meeting in Sydney of the Poliomyelitis Committee. On the afternoon of 11th November, 1959, he attended, with the Director General of Public Health, a combined meeting of the Poliomyelitis and Public Health Committee of the National Health and Medical Research Council.

Care of the long term physically handicapped.—In the last annual report, the following comments were made:—

"An important part of the duties of the Principal Medical Officer (Poliomyelitis) is to follow-up post-poliomyelitis sufferers to ensure that they are aware of the community facilities available by way of orthopaedic and physiotherapy care, rehabilitation, social services benefits and help from voluntary agencies."

"Before 'Salk' started, visits were made to country towns to assist patients and to confer with their country practitioners. Most of the country visiting by the Principal Medical Officer (Poliomyelitis) in the last three years has been restricted necessarily to the investigation of suspected acute cases. At the end of 1958 it was still not possible (because of the pressure of the 'Salk' programme) to extend the work with patients left crippled by poliomyelitis in past epidemics. Many of these patients are no longer under medical care and much could be done to make some of them more physically independent and to prevent others from developing further deformity. It is hoped to further this work in the coming year."

This hope to further the work with handicapped people was partly realised in 1959 with the availability and appointment on 9th March, 1959 of a very suitable physiotherapist, interested and skilled in the restoration of function and prevention of deformity. Rather than having a lag period of locating patients and building up a "work load", there were so many patients needing help that the physiotherapist has worked full time from the onset of her appointment. To date she has had to restrict her activities to metropolitan patients because of insufficient time for visiting country areas. The patients accepted for care are those who no longer are under treatment or are referred to the Principal Medical Officer (Poliomyelitis) by their private medical practitioner. The restoration of function already obtained with

some patients crippled years ago is a source of satisfaction. With other patients, it may not be possible to effect any great physical improvement—it is often possible, however, to increase considerably their physical independence; patients who for some years have been unable to manage the toilet, or to bath themselves unaided, have been taught to do so. There are crippled patients who are in employment but have not had their surgical gear checked for years. They could develop deformity as a result of this. With punctilious and detailed care, it may be possible to restore proper alignment and prevent the future deformity which could incapacitate the patients to the stage where they could become a burden to their families and a cost to the State.

The undertaking of the actual care of post poliomyelitis patients not under other treatment, or referred by their private practitioners is a new and worthwhile function of the Department of Public Health. Previously the work of the Poliomyelitis Services officers necessarily had to be confined to trying to ensure that patients were aware of other facilities available to them. This necessary restriction of activities to advising patients to seek care was too often ineffective.

In Victoria, this after-care work (which includes other physical disabilities as well as poliomyelitis) by the Department of Public Health has been carried out for years on a very large scale. It has been found effective and is appreciated by patients, hospital authorities and private practitioners.

It is interesting to observe the reaction of this extension of the Department's activities from the Poliomyelitis Services staff. The feeling that something new is being attempted for the patients of past epidemics (as well as trying to stop further epidemics with "Salk" vaccine) has had a marked effect even on staff not connected with actual patient care. As a result of this much necessary physiotherapy equipment has been made or obtained without cost to the Department. It has been made by staff not directly concerned with treatment or has been provided personally by staff who are directly concerned with it.

With few new cases of poliomyelitis being reported, cerebral palsied children comprise a big group in the long term physically disabled field. With the Department's approval of the personal appointment of the Principal Medical Officer (Poliomyelitis) as the honorary part-time medical officer in charge of the medical care and planning at the Ashford House School for Cerebral Palsied Children, there has been (in effect) an extension of the Department's active interest in the cerebral palsied group. The duality of the two appointments has led to some medical practitioners and paediatricians referring infants too young to be considered for Ashford House School, to the Principal Medical Officer (Poliomyelitis) for early diagnosis and assessment. When an early diagnosis of cerebral palsy is made in this way, it allows for early treatment and prevention of future possible deformity. Similarly children who are old enough but are otherwise unsuitable for Ashford House School are being referred for advice on suitable placement. After full assessment, the Principal Medical Officer (Poliomyelitis) is usually able to arrange for these children to be enrolled in such a placement as the Education Department's opportunity classes or occupation centres, the Suneden School for mentally retarded children, the South Australian Oral School, the Somerton Crippled Children's Home day school and the Woodville Spastic Centre. As well as assisting the referring practitioner, this screening and advice on placement often saves parents the frustrating experience of having their child rejected by one agency after another. This essential work in the field of social medicine is, at present, necessarily done by the Principal Medical Officer (Poliomyelitis) personally. In order that the facilities could be continued later if he were not available, a medical officer and a classified female officer on the Poliomyelitis Services staff have been encouraged to take up evening studies in the University Psychology course to enable them to carry out psychological and developmental testing. The two officers are pursuing these studies with interest.

Conclusion.—Each year since the "Salk" programme started has been a very busy but interesting one. The work pressure in previous years has been due to the "Salk" campaign itself. In 1959, there has been the opportunity to assess more accurately the trend of the campaign and to develop some additional activities in the social medicine field activities which are now recognised as integral parts of modern Public Health work.

Mortality.—There were 44 deaths from pulmonary tuberculosis and six from tuberculosis of other forms. The age and sex distribution of those having died of tuberculosis is shown in the following table :—

TABLE 20.—PULMONARY TUBERCULOSIS

Age at Death	Male	Female	Total
15-24 years	—	1	1
25-34 years	1	1	2
35-44 years	—	4	4
45-54 years	5	2	7
55-64 years	9	1	10
65-74 years	12	1	13
75 and over	3	4	7
	30	14	44

NON PULMONARY TUBERCULOSIS

Age at Death	Male	Female	Total
0-4 years	—	2	2
5-14 years	—	1	1
15-24 years	—	1	1
25-34 years	1	—	1
35-44 years	—	1	1
45-54 years	—	—	—
55-64 years	—	1	1
65-74 years	—	—	—
75 and over	1	5	6

Tuberculosis Allowances.—There was a further and considerable decrease in the numbers receiving tuberculosis allowance. Two hundred and ninety nine persons were receiving the benefit at 31st December, 1959 compared with 350 at 31st December, 1958.

X-Ray Surveys.—Early in 1959 the first compulsory X-ray survey of South Australia was completed. A total of 536,478 persons were examined in this first complete survey. The yield of new notifications of tuberculosis as a direct result of this survey was 10 cases per 10,000 examined in the metropolitan area and seven cases per 10,000 from country surveys.

During 1959 a total of 127,393 persons were examined ; 73,431 in the metropolitan area and 53,962 in the country. Eighty five new notifications of tuberculosis resulted directly from survey examination of which more than two thirds were male.

Tuberculin Testing and B.C.G. Vaccination.—There was no change in the programme of tuberculin testing and B.C.G. vaccination in schools and other institutions except with National Service Trainees which ceased when the scheme was abandoned.

The table shows the results of tuberculin testing and numbers vaccinated in 1959. There is a decrease in the infection rate of both metropolitan and country children compared with the previous year. The total number tested was considerably greater than in the previous year particularly in the country areas.

TABLE No. 21.—MANTOUX TESTING AND B.C.G. VACCINATION, 1959—SOUTH AUSTRALIA

Group	Number Tested	Naturally Positive	Percentage Naturally Positive	Positive from Previous B.C.G. Vaccination	Negative	Vaccinated
Country school children, all grades—						
Australian born	12,236	260	2.1	127	11,616	—
Migrants	2,077	143	5.9	54	1,840	—
Sub-total	14,313	403	2.8	185	13,456	3,587
Metropolitan, 7th Grade school children—						
Australian born	6,193	211	3.4	71	5,740	—
Migrants	1,366	139	10.1	106	1,103	—
Sub-total	7,559	350	4.6	177	6,843	6,821
National Service Trainees	971	119	12.2	320	507	503
Institutions and others	345	1	0.3	1	340	—
TOTAL	23,188	873	3.7	683	21,146	8,689

6. SUMMARY AND COMMENTS

Despite staff shortages the work of the Department and the Central Board of Health has continued to expand in line with development and population increase in the State.

In co-operation with Local Boards of Health, every effort has been made to maintain and improve the health of the community as a whole. Local Boards have been urged to foster immunization programmes; to improve standards of sanitation; to police food premises closely, and to bring about a general improvement in living standards. Much more has yet to be done and will be done in health education to prevent the spread of infection and disease, and to effect a further improvement in the general health of the people of the State.

Health Statistics.—As in previous years, a steady increase in population has occurred. A record number of births was registered and the infant mortality rate showed a decrease compared with the previous year.

Public Health Supervision.—The rapid expansion in industry and the opening of new areas for home building have added to the responsibilities of the Public Health section. New technical processes in industry have resulted in a demand for medical advice on problems relating to the health of employees. These demands have been met, but additional highly trained staff is necessary to meet this increasing work, to cope with problems arising out of the use of radioactive materials, and to handle the general public health problems in sanitation resulting from the expansion of residential areas throughout the State.

Communicable Disease.—The year has been remarkable for some small outbreaks of typhoid fever and diphtheria. These have presented interesting epidemiological problems which have in the main been thoroughly worked out. They serve to point the need for constant care in environmental sanitation, and a continuing drive for artificial immunization against diphtheria. It has been rightly said that no civilized community should tolerate this disease.

Immunization against poliomyelitis has continued and a total of 1,198,289 injections have been given since the campaign commenced on 28th June, 1956. No deaths occurred during the year and the only one case of poliomyelitis reported was a child who had not been immunized. The continued low incidence is very heartening, particularly as since the campaign started no cases of poliomyelitis have occurred in persons fully immunized.

Epidemics of influenza, scarlet fever and infective hepatitis occurred during the year and cases of other communicable diseases were reported.

School Health Services.—Although, for various reasons, medical staff shortages occurred throughout the year many more school children were examined than in previous years.

Important changes were noted in the frequency of certain physical defects. Defects of hearing, of the nose and throat, and of the teeth have been decreasing in frequency for several years. This probably indicates improved care, particularly with regard to preventable or easily remediable defects. It is also heartening to note a progressive decrease in pertussis.

The increased discovery of heart disease is distressing, but it may represent, in part, increased awareness and better methods of detection and assessment.

The dramatically decreased incidence of rubella is no cause for satisfaction. It is of great importance that children should contract this disease in or before their schooldays, so that as young women they will not be exposed to its hazards during pregnancy.

Tuberculosis.—The completion of the first full Chest X-Ray Survey of the people of South Australia marks a milestone in the control of tuberculosis. The second survey has already begun. Results of this and other aspects of tuberculosis control are heartening, and it is particularly significant to note a continued decline in the proportion of children who have been infected with the tubercle bacillus, as shown in the results of the tuberculin testing work in schools. This is the surest indication that the fight against tuberculosis is being won.

Acknowledgments.—The co-operation and assistance of many other departments (both Commonwealth and State), other organizations, and individuals during the year is acknowledged and appreciated by the Central Board and the Department.

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M. E. S. BRAY, Secretary

Adelaide, 6th September, 1960