Annual report of the Director of Public Health of the United Provinces of Agra and Oudh.

SEVENTY-FOURTH ANNUAL REPORT

OF THE

DIRECTOR OF PUBLIC HEALTH

OF THE

UNITED PROVINCES

FOR THE YEAR ENDING DECEMBER 31, 1941

ALLAHABAD:
SUPERINTENDENT, PRINTING AND STATIONERY, UNITED PROVINCES, INDIA
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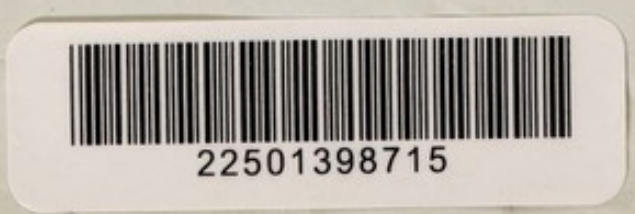

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Seventy-fourth Annual Report of the Director of Public Health, United Provinces, for the year ending 31st December, 1941

CHAPTER I

METEOROLOGY

The rainfall was in slight defect in the east and in moderate defect in the west United Provinces. Humidity and maximum temperatures were generally normal excepting the hot weather which was unusually hot.

CHAPTER II

CHIEF VITAL STATISTICS

1. The following were the chief vital statistical data for the province :—

Section I	Provincial	Rural areas	Urban areas
Midyear estimated population for 1941 ..	55,241,012	48,395,879	6,845,133
Births	1,771,957	1,517,559	254,398
Rate per mille	32·08	31·36	37·16
Deaths	1,064,908	891,230	173,678
Rate per mille	19·28	18·42	25·37
Still-births	11,114	6,585	4,529

Section II	Birth rate	Death rate	Still-births
Hindus	32·52	19·56	8,698
Muslims	32·82	19·18	2,372
Europeans and Anglo-Indians	8·72	3·28	..
Indian Christians	16·50	7·00	21
Other classes	6·65	3·81	23

2. Infantile mortality rate per 1,000 births was 131·20. The highest mortality amongst infants was noticed in May (27,461) and the lowest in February (12,371).

3. *Verification of causes of deaths*—Four thousand nine hundred and ninety-seven deaths were verified by civil surgeons and their subordinate medical officers. Of these, 949 were amongst children under 15 years of age, 2,860 amongst adults from 16—45 years of age and 1,188 amongst adults exceeding 45 years of age.

4. *Verification of registration of vital statistics*—During 1941 1,317,672 entries of births and deaths were checked by the vaccination staff and 234,936 by the district health staff.

5. *Neglect to comply with registration rules*—The number of persons fined and the amount of fines realized for non-compliance of these regulations were 1,166 and Rs.1,073 respectively. Two hundred and forty-seven cases were compounded on payment of Rs.125 and 34 persons were let off with a warning.

CHAPTER III

General Health of the Province including epidemiology of chief diseases

1. *Cholera*—Fifty-two thousand five hundred and forty deaths were reported representing 2,780 deaths from towns and 49,760 from villages, giving a death rate of 0·41 and 1·03 respectively. The death rate for the province as a whole was 0·95 against the quinquennial average of 0·57 and the last year's rate of 0·54.

The number of deaths during the four quarters of the year was :

—	I quarter	II quarter	III quarter	IV quarter	Total
Number of deaths ..	555	28,351	21,714	1,920	52,540

The highest figures were recorded in July and the lowest in February.

The number of anti-cholera inoculations given was 1,625,326. Other anti-epidemic measures consisted of permanganation of wells, disinfection of infected houses and articles, isolation of the sick and their treatment. The contacts were also inoculated and given prophylactic treatment.

The following quantities of medicines and disinfectants were consumed in anti-epidemic measures :

		lb.
1.	Permanganate of potash	89,304
2.	Bleaching powder	40,099
3.	Kaolin	14,532
4.	Essential oils mixture	4,696

Monetary grants amounting to Rs.20,682 were made to the affected districts for anti-epidemic measures. Temporary regulations under the Epidemic Diseases Act were enforced where necessary.

A special anti-cholera scheme usually instituted on the border of Gorakhpur district to intercept cholera cases from Nepal territory continued for about 6½ months from 16th April, 1941 to 11th November, 1941.

2. *Plague*—4,035 deaths were recorded, 157 in towns and 3,878 in villages, with a death rate of 0·02 and 0·08 respectively. The provincial death rate was 0·07 against the quinquennial average of 0·32 and the last year's rate of 0·24.

The number of deaths during the four quarters of the year was :

——	I quarter	II quarter	III quarter	IV quarter	Total
Number of deaths ..	2,588	857	78	512	4,035

The month recording the highest mortality was March, while the month with the lowest mortality was September.

Inoculations, evacuation and destruction of rats and rat-fleas were the principal preventive measures enforced. As a general preventive measure anti-rat campaign was carried out in some districts and municipalities. Fumigation of rat burrows with calcid briquettes was also carried out at a few places and with Cynogas " A " dust after calcid briquettes became unobtainable.

Rs 3,000 were given as grants for anti-plague measures in rural areas. A special grant of Rs.4,000 was also given by Government to the Gorakhpur Municipality on condition that the Municipal Board spent an equal amount.

117,031 anti-plague inoculations were given. In places where the epidemic was virulent, temporary regulations to enforce effective anti-plague measures including evacuation of infected premises were applied.

3. *Small-pox*—13,161 deaths were reported under this head, of which 1,906 occurred in towns and 11,255 in rural areas. The respective rates per mille of the population were 0·28 and 0·23. The mortality for the whole province was 0·24 as compared to 0·20 during the previous quinquennium and the last year's rate of 0·33.

The distribution of mortality during the quarterly periods of the year was :

——	I quarter	II quarter	III quarter	IV quarter	Total
Number of deaths ..	3,133	6,954	2,327	747	13,161

The mortality was the highest in April and the lowest in October.

4. *Fevers.* (*Comprising of Malaria, Enteric fever, Measles, Relapsing fever, Kala Azar, Influenza, Cerebro-spinal fever, Typhus fever, Black water fever, and other fevers*)—The mortality from fevers as a whole aggregated 802,931 distributed over quarterly periods as under :

I quarter	.. ..	159,460
II ,,	.. ..	241,557
III ,,	.. ..	208,379
IV ,,	.. ..	193,535

There was a slight decrease in deaths under "fevers" during 1941 as compared to the previous year, the recorded figures being 802,931 against 813,622. The respective death rates were 14·5 and 16·8 and the quinquennial rate was 17·5. The mortality in urban areas was 10·3 and in rural areas 15·2.

(*a*) *Malaria*—There were 707,456 deaths recorded from this cause during 1941 as compared to 717,319 during the previous year, the mortality rates being, respectively, 12·8 and 14·8. 679,595 deaths with a death rate of 14·00 were reported from rural areas and 27,861 with a death rate of 4·10 from urban areas.

Further details concerning malaria control schemes are given in Chapter VII.

(*b*) *Relapsing fever*—The number of deaths reported under this head during 1941 was 154 against 51 registered in the preceding year. Sixty-seven deaths were reported from urban and 87 from rural areas.

(*c*) *Enteric fever*—There were 8,436 deaths with a death rate of 0·15 reported from enteric fever during 1941, as against 6,615 and 0·14 during the previous year. The urban and rural areas contributed 4,275 and 4,161 deaths, with death rates of 0·6 and 0·1 respectively.

(*d*) *Kala azar*—This was responsible for 122 deaths (21 in urban and 101 in rural areas) against 83 during 1940. The incidence of the disease being higher in the Benares and Gorakhpur divisions, arrangements for the treatment of these cases were continued in the following five specially equipped centres:

(1) King Edward VII Hospital in the Benares municipality.
(2) Chandauli in the Benares district.
(3) Gorakhpur ...
(4) Deoria ... } in the Gorakhpur district.
(5) Maharajganj ...

(*e*) *Influenza*—The number of deaths reported from influenza during the year under report was 391 (116 from the urban areas and 275 from the rural areas) as against 244 in the previous year.

(*f*) *Cerebro-spinal Meningitis*—During 1941, deaths from this disease numbered 70 (44 from towns and 26 from rural areas) against 76 in the preceding year. In view of the skilful treatment and careful nursing which is required for the treatment of these cases special arrangements have been made for treatment of these cases in civil hospitals and selected outlying dispensaries.

5. *Respiratory diseases*—The deaths and death-rate from these causes were 41,523 and 0·7 distributed quarterly as below as compared to previous year's figures of 40,293 and 0·8

I quarter	II quarter	III quarter	IV quarter
10,214	12,201	8,656	10,452

The highest mortality was recorded in April and the lowest in September. The mortality under this head in urban and rural areas was 34,143 and 7,380 respectively.

5(*a*) *Tuberculosis*—The total number of deaths recorded from pulmonary tuberculosis was 5,860 (5,100 in the urban areas and 760 in the rural areas) giving a death-rate of 0·1. The number of deaths recorded from tuberculosis of joints was 286, (124 from the urban areas and 162 from the rural areas). Deaths recorded from other tubercular diseases were 2,099 (1,324 in the urban areas and 775 in rural areas).

6. *Dysentry and diarrhoea*—Deaths registered from these causes aggregated 17,897 distributed over the various quarters as under :

I quarter	II quarter	III quarter	IV quarter
2,419	6,582	5,215	3,731

The mortality under this group of causes increased slightly during 1941 as compared to the previous year, the recorded figures being 17,897 against 16,238 respectively. The mortality was the highest in June and the lowest in February. The respective figures of mortality for the urban and rural areas were 13,286 and 4,611 with death-rates per mille of 1·9 and 0·1.

The districts recording high rates were Agra (1·4), Moradabad (1·2), Dehra Dun (1·1) and Lucknow (1·0).

7, *Epidemic Dropsy*—During 1941, 32 deaths were reported from this disease as against 55 in the preceding year. Of these 25 were reported from towns and 7 from rural districts. The largest number of deaths (10) was reported from Benares City.

Cases were treated either in infectious diseases hospitals or at fixed dispensaries. Necessary preventive measures were taken to check the spread of the disease. People were advised to exclude mustard oil from their diet, to be careful about rice diet and to take plenty of green vegetables and fruits.

8. *Injuries*—15,783 deaths were recorded under this head of which 1,355 were due to suicides, 11,049 to wounds or accidents, 2,870 to snake-bites, 182 to rabies, and 327 were killed by wild animals.

9. *All other causes*—The deaths on this account were 117,038 yielding a death rate of 2·1.

10. *Deaths from Child birth*—In 1941 altogether 2,091 deaths were recorded from child-birth (1,604 in towns and 487 in rural areas) against 1,921 in 1940 (1,488 in urban and 433 in rural areas).

CHAPTER IV

Fairs and Festivals

Fairs and festivals held during the year were, as usual, supervised by the officers of the public health department and they passed off without any outbreak of infectious disease.

CHAPTER V

Sanitation and Water-supply in Urban Areas

Sanitary staff in municipality.

The municipal public health staff consisting of medical officers of health and sanitary inspectors continued to be maintained at the sanctioned strength.

2. The sanitary conditions of towns were regularly inspected by the officers of the public health department and the local authorities were advised on necessary improvements. Efforts were made to remove projections over drains and to improve drainage, to provide adequate number of latrines, urinals and other sanitary units.

Sanitary conditions of towns.

The department is taking particular steps to provide suitable hospitals for the treatment of infectious cases but the question of finances is a great handicap to any quick advance in this direction.

3. As usual, in nearly all towns with pipe water-supply, the potability of water-supply was locally tested by medical officers of health in municipal laboratori s. For control purposes samples of water were also examined at the Provincial Hygiene Institute periodically.

Municipal water-supply.

4. Five samples of water from railway stations were examined at the Provincial Hygiene Institute, during fairs and epidemics. Water analysis reports of divisional medical officers of railways were also scrutinized and necessary advice for improvement of their water-supply was given.

Analysis of water-supply of railways.

CHAPTER VI

Rural Sanitation.

1. The service was extended to the districts of Farrukhabad, Hamirpur and Banda raising the total number of districts under health service to 40.

District health service.

2. Improvement of village water-supplies received special consideration. The Rural Development Department made grants for improvement of drinking water wells in the rural development villages and a sum of Rs. 6,814-9 was also sanctioned by the Board of Public Health for other areas. The work is showing progress.

Village water-supplies.

3. The conditions of rural housing are steadily improving as a result of intensive public health propaganda by means of local advice, lectures and exhibitions. There is a general tendency to rebuild new houses on better lines and to provide windows and ventilators in the existing ones.

Rural housing.

The chief defect is about cattle-sheds and lack of proper drainage facilities. The co-operative efforts of public health and rural development departments are proving effective in separating cattle-sheds from inhabited portion of houses. To deal with drainage difficulties absorption pits are being dug to receive the house waste water.

4. In the Health Unit, Partabgarh, intensive public health work is undertaken on well tried and established lines. It demonstrates what can be achieved through intensive public health measures and as such it serves as a practical demonstration centre for training of public health workers.

Health Unit Partabgarh.

5. The Board of Public Health sanctioned grants amounting to Rs. 31,265-6 for small public health works in villages during the year 1941-42 against Rs. 41,447 in the year 1940-41.

Rural public health Works.

6. During the year 1940-41 the total income of the district boards in the province from all sources including Government grants was Rs.2,02,24,139 and excluding such grants was Rs. 1,18,36,706. The total expenditure by district boards on public health was Rs. 6,15,422 as per details below :

Expenditure on public health by district boards.

	Rs.
(i) Vaccination	3,04,670
(ii) Public Health Establishment (other than vaccination)	2,06,587
(iii) Epidemics	33,071
(iv) All other public health purposes	71,094

Receipts from Government, the Board of Public Health and other sources specially earmarked for public health purposes aggregated Rs.1,12,229. Out of their own revenue of Rs. 1,18,36,706 the boards spent Rs. 5,03,193 on public health. In 1940-41 the percentage of expenditure was 4·02, in 1939-40 it was 3·8 and in 1938-39 it was 3·7.

CHAPTER VII

MALARIA

1. Malaria in epidemic form was reported from 10 districts and there were 36,498 seizures. 450 lbs. of quinine and cinchona were distributed free out of the district reserve stock. Mortality from this cause for the province as a whole aggregated 707,456 with a death-rate of 12·8 as against 717,319 and 14·82, respectively, in the preceding year.

Malaria conditions in the province.

2. (*a*) Malaria surveys and investigations on specific local malaria problems were carried out in 11 places and necessary recommendations made.

Routine activities.

(*b*) A census of enlarged spleen amongst school children was carried out in districts under health service during spring and autumn malaria reasons. Saharanpur, Unao, Muzaffarnagar, Meerut and Farrukhabad reported the highest spleen rates during the autumn, whereas Bareilly, Naini Tal, Saharanpur, Basti and Shahjahanpur reported the highest rates during the spring.

3. The special anti-malaria schemes which were introduced in October, 1938, in collaboration with the Indian Research Fund Association operated in a group of 58 villages in the Tarai of Naini Tal district and in 12 villages in the canal irrigated area in the Hardoi district. Periodical pyrocide mixture spraying has given good results.

Special schemes.

Various treatment schemes in Tarai and Bhabar Estates and several other places were continued.

3. 232¼ lb. of quinine sulph. tablets and 461 lb. of cinchona tablets were supplied to 48 districts for free distribution in malarious villages under the rural development scheme.

Free distribution of quinine in the villages under rural development scheme.

Government Quinine Tablet Manufacturing Factory—

4. (i) The factory manufactured quinine and cinchona tablets for Government departments and local bodies. The sales amounted to Rs.1,36,076 against Rs.74,343 in 1940.

Sale of quinine and cinchona tablets.

(ii) 2,562 lb. of quinine sulph. and 329 lb. of cinchona febrifuge powder worth Rs.72,686-11 were sold against sale-proceeds of Rs.54,131-14 in the preceding year.

Sale of Quinine and Cinchona powders.

(iii) 146¼ lb. of quinine and 302 lb. 2 oz. cinchona tablets were issued for replenishment of district reserve stocks in certain districts and for epidemic purposes.

Replenishment of district reserve.

(iv) According to the reports of the civil surgeons and the superintendents of jails of the Province 1,269 lb. 6 oz. of quinine and 1,019 lb. 14 oz. of cinchona were consumed during 1941, as compared to 1,132 lb. 11 oz. of quinine and 1,426 lb. 8 oz. of cinchona during 1940. As 974,032 cases of malaria were treated in hospitals in the province during 1941 this works out to an average of 16·34 grains per patient treated in 1941 against a minimum of 60 grains required for each paroxysm of malaria.

Consumption of quinine in provinces.

The following table shows the consumption of quinine and cinchona products in urban and rural areas of the province during 1941 through all sources (Medical, Jails, Public Health, local bodies and other departments) but does not include private purchases:

—	Distributed free		Sold	
	Quinine	Cinchona	Quinine	Cinchona
Rural areas	1,310 lb. 14 oz.	2,261 lb.	686 lb.	..
Urban areas..	1,104 lb. 2 oz.	..	..	..

CHAPTER VIII

Maternity and Child Welfare

1. The Director of Maternity holds executive and supervisory control over maternity work. There are local committees for Red Cross work at the district headquarters. The Collector of the district is usually the President and the Medical Officer of Health the Honorary Secretary of the district committees.

Organization.

2. Twenty-two medical women, 21 health visitors, 199 assistant midwives and 61 dais were engaged in urban areas and 161 assistant midwives and 85 dais in rural areas. In addition, the services of women doctors in hospitals were utilized for domiciliary midwifery service in difficult cases in places where no Red Cross woman doctor was employed.

Domiciliary midwifery cases conducted in dwelling-houses.

Normal cases were ordinarily conducted by assistant midwives and abnormal cases were sent to the nearest local women's hospital.

3. The total number of maternity centres is 331 including 24 rural development maternity centres (171 rural and 160 urban).

Antenatal and postnatal clinics were held at maternity centres. The workers also did this work at the residence of the women concerned.

4. Six assistant midwives qualified from the Silver Jubilee Health School as Health Visitors and 23 probationers obtained midwifery certificates. Training to indigenous dais was also given at the Health School, Health Unit and at various Maternity centres.

Silver Jubilee Health School.

5. *Finances*—

	Rs.
(i) Government grants	1,37,600
(ii) Grant from Central Council of Victoria Memorial Scholarship Fund, Delhi	1,000
(iii) Grant from the Provincial Branch of the Indian Red Cross Society	14,945
(iv) Miscellaneous receipts	1,260
Total ..	1,54,805
Opening balance ..	2,400
Expenditure ..	1,55,443

A sum of Rs.1,27,969, was also spent on Maternity and Child Welfare work by local branches by raising local contributions.

6. The total number of cases conducted by the staff with or without indigenous dais during the year under report was 55,708 while that of the cases not attended in the same area was 101,667. The deaths reported in children under one year of age in the former case were 2,479 and in the latter 46,656, yielding a ratio of infantile mortality per mille of 44·49 and 458·81 respectively, as compared with 46·13 and 305·67 in the preceding year. The maternal mortality among the cases conducted by the staff with or without dais was 3·19 per 1,000 confinements against 7·69 representing mortality in all unattended cases in the same area. The maternal mortality rate for the province as whole was 1·17. Number of cases sent to women's hospitals by the maternity staff during 1941 was 11,297.

Vital Statistics.

CHAPTER IX

School Hygiene and Medical Inspection of School Children

1. The thirteen wholetime school health officers conducted detailed medical examinations in 168 out of 185 anglo-vernacular institutions. They filled medical history-sheets of 21,600 scholars out of 62,400 on the rolls, re-

Statistics of medical examination.

examined about 5,000 boys and made special examination of another 1,000 scholars. They also visited 156 vernacular schools out of 432 for "Ordinary" examinations, and detected defects in 10,700 children out of 69,000 on the rolls.

In 19 smaller municipal towns the *ex officio* school health officers conducted detailed medical examinations in 40 out of 54 schools, and examined 6,600 scholars out of 21,700 on the rolls. They also visited 98 out of 219 vernacular schools and conducted "Ordinary" examination of about 12,000 boys out of 27,000 on the rolls.

Medical inspection of scholars in rural areas was undertaken by district medical officers of health in their capacity of *ex officio* school health officers for districts. On an average each district medical officer of health examined 3,500 boys in vernacular schools.

Statistics of defects.

2. Among the school boys examined in detail in urban areas about 40 per cent. were found defective against 45 per cent. in the last year; of these 15 per cent. had more than one defect. In rural areas 28 per cent. were found defective against 22 per cent. in the last year; 10 per cent. having more than one defect. The incidence of main defect was as follows:

Defects	Percentage of cases found defective	
	Urban	Rural
Poor nutrition	14·5	22·2
Teeth and gums	12·0	11·2
Pyorrhoea	2·0	2·9
Tonsils and Adenoids	16·9	4·2
Other glands	6·1	1·3
Mouth breathing..	2·8	1·3
Diseases of eye-lids	7·7	4·0
Defective vision	8·4	Boys in rural areas not examined for defects in vision.
Skin diseases	4·2	3·0

Correction of defects.

3. Eighty thousand scholars received treatment at the 13 school clinics under the charge of wholetime school health officers. Honorary Opthalmologists were attached to all the clinics except those at Saharanpur, Gorakhpur, and Bareilly for affording optical treatment and honorary dentists except at Saharanpur, Gorakhpur, Jhansi and Cawnpore for dental treatment.

A sum of Rs.3,000 was allotted for free supply of milk to the poor children who were ill-nourished and for spectacles to indigent boys suffering from defective vision.

Health education.

4. The educative methods of approach to the correction of physical defects in school children were as usual undertaken through lectures, lantern demonstrations and the Junior Red Cross Groups, which concentrated on the practice of health habits. In rural areas these efforts were supplemented by the stock of village medicine chests in a number of schools. Occasional conferences were held by wholetime school health officers at the clinics, to which parents and guardians of children were specially invited. The officers held courses of lectures in hygiene, sanitation and infectious diseases in training colleges and also gave lectures for the first aid course of the St. John Ambulance Association. They examined about 1,000 scholars in this course and 4,100 in the Mackenzie School Course.

An attempt was made to train school teachers in giving simple treatment for defects found at inspections, e.g., in Naini Tal a stock solution of 5 per cent. copper sulphate in glycerine was used with good results in the treatment of trachoma.

CHAPTER X

Health Propaganda

Red Cross work.

5,885 Junior Red Cross Groups with a membership of 106,351 functioned during the year.

St. John Ambulance Association.

2. There were 47 district centres 19 ambulance divisions and 12 nursing divisions. These co-operated with the district authorities in training personnel for Air Raid Precaution work and Civil Defence work. There were also 23 cadet divisions.

Hygiene propaganda.

3. Health propaganda and education of masses in hygiene and anti-epidemic measures was the chief mission of the staff of the Hygiene Publicity Bureau. The opportunities of fairs and exhibitions and other occasions of large congregations were availed of for various publicity measures, viz., lectures, homely talks, exhibition of cinema films, magic lantern slides and models, baby shows, health weeks and distribution of posters and leaflets. The hygiene publicity van equipped with health models, films, loud speakers and gramophone records visited 30 districts covering about 6,300 miles and gave 147 demonstrations which were witnessed by about 210,000 persons.

Supply and distribution of literature, posters, etc.

4. Posters (15,000) and leaflets (200,000) and notices (20,000) explaining dangers of the spread of cholera through pilgrim traffic to the Kumbh Mela of Allahabad and the benefits of anti-cholera inoculation were widely distributed to the public and pasted in railway carriages, motor buses and other places of importance. Radio talks on the subject were also given. Besides, other literature, consisting of 9,800 illustrated posters and 390,000 leaflets and booklets, was supplied free to various

agencies for distribution. New posters on anti-rabic treatment and vitamins were designed and leaflets on adenoids and tonsils were written.

Voluntary contributions.

5. The voluntary contributions of local bodies for hygiene propaganda work in their area amounted to Rs.2,900 in 1941 against 2,600 in 1940.

CHAPTER XI

Public Health Administration

Public Health personnel.

1. The post of Assistant Director of Public Health, Incharge, of the Hygiene Publicity Bureau, which was left unfilled from 1st January, 1938, was refilled from 9th May, 1941.

Budget grants.

2. A total sum of Rs.30,64,609 against Rs.23,85,815 in the year 1940-41 was provided in the budget of the Provincial Government for the year 1941-42 for the entire Public Health Department, including the Public Health Engineering Section and the grants-in-aid for sanitary works, which are distributed through the Board of Public Health; the increase being due mainly to the allotments for the Kumbh Mela at Allahabad. A sum of Rs.19,44,877 against Rs.18,66,165 of the last year, was for activities directly controlled by the Director of Public Health.

CHAPTER XII

Vaccination

Section A

N. B.—The report is for the calendar year 1941, but the comparative figures are for the official year 1940-41.

1. This is the primary responsibility of local authorities. 49 Assistant Superintendents of Vaccination and 942 vaccinators were employed during the year. Vaccination was also offered by sanitary inspectors, medical officers of fixed and railway dispensaries and private medical practitioners. Military medical officers performed vaccination in cantonments.

There was no change in the territorial areas in respect of compulsory vaccination. It is compulsory in urban areas only.

The number of vaccinations performed by various agencies during the year was 1,954,161 (1,611,868 primary and 342,293 re-vaccinations) as against 2,029,521 (1,609,738 primary and 419,783 re-vaccination) in the preceding year. The number of secondary operations performed was 13,315 against 10,834 in the preceding year. The number and percentage of successful vaccinations in which results were known were 1,543,017 and

96·71 in the case of primary vaccination and 134,458 and 44·84 in the case of re-vaccinations against previous year's figures 1,546,310, 98·86, 162,188 and 44·57 respectively.

The total number of persons vaccinated was 1,940,846 against 2,018,687 in the previous year. Each vaccinator vaccinated on an average 2,029 persons.

The number of children under one year of age successfully vaccinated was 1,022,845 against 1,008,396 in the previous year. The ratio of infantile successful vaccination to total births was 57·70.

The number of schools inspected for vaccination was 2,484 and the number of scholars vaccinated was 36,122.

Expenditure incurred on vaccination amounted to Rs.3,86,171 against Rs.3,81,695 in the preceding year. Out of the total expenditure of Rs.3,86,171 a sum of Rs.3,05,309 was spent in rural areas and Rs.80,862 in urban areas.

No case of encephalitis following vaccination was reported.

Section B—Government Vaccine Depot, Patwadangar, District Naini Tal

Supply of calves and lymph manufactured and issued.

(*a*) Out of 410 calves purchased during the year 405 calves were successfully vaccinated and 128,376 grammes of issue lymph was prepared which represented 3,209,400 doses. In addition, there was a reserve of 193,585 grammes of lymph. 23·5 grammes of dry vaccine was also prepared from two buffalo calves.

133,421 grammes of lymph (3,335,525 doses) were issued for vaccination purposes including that consumed for vaccinating calves leaving a balance of 188,540 grammes in reserve for future needs.

Every sample of lymph was tested for purity and potency before issue. A sample of vaccine lymph was tested at the School of Tropical Medicine, Calcutta, and found to be of "comparatively good potency."

The cost of manufacture of issue lymph for human consumption was annas four and pies five per gramme.

Income and expenditure of the Depot.

(*b*) The total receipt on the sale of vaccine lymph and other articles during the year 1941-42 amounted to Rs.58,360 against the total expenditure of Rs.38,981.

Electric installation.

(*c*) The contract for the supply of electric energy from the Municipal Board, Naini Tal, terminated on 31st March, 1941. It was renewed for a period of 3 years for the supply of 15,000 units on yearly payments of Rs.2,750. Any excess quantity consumed will be chargeable at the rate of annas four per unit.

CHAPTER XIII

Other Public Health Services

Section A—Administration of travelling dispensaries

As usual, the 26 provincial travelling dispensaries were engaged in anti-epidemic, fair and other routine public health duties. They visited 5,772 villages, treated 183,950 patients and gave 28,227 anti-plague and 194,633 anti-cholera inoculations. They also associated themselves with rural development work, hygiene publicity and the execution of sanitary measures in the areas visited by them. Two district board, one forest and 2 Tarai and Bhabar Estates travelling dispensaries also functioned during the year. Three reserve travelling dispensaries were mobilized for fair duties at Saharanpur, Ramnagar (Naini Tal) and Fatehpur. 20 to 50 temporary medical officers had also to be recruited for temporary epidemic duties.

Section B—Hygiene Institute

Laboratory work.

Six hundred and twenty-nine samples of water were examined bacteriologically and chemically. Two hundred and fifty-six samples of disinfectants, stools, vaccine lymph, milk, phenyle, biscuits and turmeric were also examined.

Manufacture of cholera vaccine.

2. In all 1,451,715 doses of cholera vaccine were manufactured of which 7,23, 222 doses were supplied to meet immediate requirements and the rest (282,898 doses in concentrated form and 445,595 doses in ready ampoules) were kept in reserve.

Training of Public Health personnel.

3. The only class held was the Chief Sanitary Inspectors' Refresher Course. A series of lectures were also given to the health visitors' class of the Silver Jubilee Health School.

The following examinations were conducted :

(i) Examination of medical officers of health in local enactments relating to public health.

(ii) Grade examination of medical officers incharge, travelling dispensaries.

(iii) Examination for Chief Sanitary Inspectors.

Investigation and research work.

4. Researches into the helminthic survey in the Lucknow City and in the prevalence of goitre in Almora were continued. Investigation into the prevalence of typhoid in the Naini Tal Municipality is in progress. The question of accommodation of prisoners in jails and their dietary was also examined.

SECTION III

Anti-rabic treatment

5. The number of treatment centres in the United Provinces continued to be 17 including the one seasonal centre at Mussoorie.

6. 15,827 patients attended the centres against 14,827 in the previous year. Of these, 15,143 were actually admitted to treatment and 684 were advised. Eighty-two per cent. cases were due to dog bites, 12 per cent. to jackals and 6 per cent. to other animals.

Number of patients who attended the centres for treatment.

7. Cost of treatment was recovered from 390 patients against 424 in the last year.

Paying patients.

SECTION IV

Public Analyst

8. During 1941 the provisions of the United Provinces Prevention of Adulteration Act were extended to one new district and to 14 municipalities, one notified area and several town and rural areas in 11 districts in respect of additional articles of food. The Act is now in force in 85 municipalities, 44 notified areas and several town and rural areas of 41 districts of the United Provinces.

Extension of Act.

9. The total number of samples for analysis during the year under report rose to 13,347 compared to 12,353 samples received last year. Of these, 10,184 samples were genuine and 2,836 adulterated. Three hundred and twenty-five samples could not be analysed as they were received in a condition unfit for analysis. The percentage of samples found adulterated was 21·7 as against 21·6 during 1940. The percentage of adulterated samples was the highest in the Dehra Dun Municipality (31·6) and lowest in the Meerut Municipality (8·7).

Working of the Act.

10. 2,840 were prosecuted under the Act of whom 2,044 persons were convicted and fined Rs.92,153. The average amount of fine per person was Rs.45 as against Rs.44 in 1940. One person was imprisoned, 2 persons were both imprisoned and fined and one person was released under the First Offender's Probation Act. Six persons were warned and cases against eight persons were withdrawn. The cases against six persons were compounded or compromised by the local authorities. This action was irregular and is being pointed out to them.

Prosecutions and the amount of fine levied.

The mandatory fine under section 19(3) of the Act was generally imposed except in a few cases. Fines ranging from Re.1 to Rs.5 were inflicted in a number of cases. The omission to realise mandatory fines and the inadequacy of fines in certain cases have been taken due notice of—

Of the 15 larger municipalities the average amount of fine inflicted per case was the highest in Muttra (86·7) and the lowest in Lucknow (27·4).

In spite of repeated instructions issued from time to time only 91 local authorities have enforced the provisions of the butter, ghee and fat licensing rules while 101 local authorities have not yet introduced these rules with the result that in latter places vegetable products and ghee are sold side by side to the prejudice of the purchaser. The application of these rules throughout the province is desirable.

CHAPTER XIV

MISCELLANEOUS

Public Health Act.

1. Model by-laws for the regulation and control of flour mills within municipal areas, to regulate construction of new houses and additions to old ones in municipal areas demarcated as civil lines and for the registration of births and deaths in urban areas were drawn up and circulated to the municipal areas for adoption.

Industrial Hygiene.

2. The district and municipal medical officers of health in their capacities of *ex officio* Additional Inspectors of Factories within their jurisdiction inspected sanitation of factories and submitted reports to the Chief Inspector of Factories. As a measuee to prevent dislocation of Industrial work connected with war effort, the Public Health Department arranged mass inoculation of labour against cholera in all industrial concerns. To provide effective arrangements for the examination of drinking water supplies in all factory concerns detailed instructions were issued with the approval of Government that in cases of factories employing less than 100 men, the analysis of water-supply will be done by public health authorities free of charge while in the case of larger concerns analysis fee shall have to be paid by factory owners and in all cases in which the factory owners fail to comply with the recommendations made by the public health authority.

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LUCKNOW :

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