

Annual statistical returns and short notes on vaccination in Bihar and Orissa.

Contributors

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ANNUAL STATISTICAL RETURNS
 AND
 SHORT NOTES ON VACCINATION
 IN
 BIHAR AND ORISSA

FOR THE YEAR

1918-1919

BY

S. N. TIWARI, D.P.H.,

Offg. Sanitary Commissioner, Bihar & Orissa.



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[Price—Indian, 12 annas ; English, 1s.]

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ANNUAL

VACCINATION REPORT

BIHAR AND ORISSA

for the year.

1918-19.

1. Staff.—Major W. C. Ross, I.M.S., was in charge of the Department from 1st April to the 30th November 1918 and Dr. S. N. Tiwari, from the 1st December 1918 to 31st March 1919.

The office of the Deputy Sanitary Commissioner, North Bihar Circle, was held by Dr. B. P. Mazumdar, throughout the year, and Dr. T. Sebastian, remained in charge of the Chota Nagpur and Orissa Circle and in supervising charge of the Vaccine Depôt during the year.

The office of the Deputy Sanitary Commissioner, South Bihar Circle, was held by :—

- (1) Dr. S. Maitra—from 1st to 30th April 1918.
- (2) Dr. B. P. Mazumdar—from 1st May to 20th September 1918, in addition to his own duties as Deputy Sanitary Commissioner, North Bihar Circle.
- (3) Dr. S. N. Tiwari—from 21st September to 31st March 1919.

The inspecting staff consisted of 20 District Inspectors of Vaccination and 66 Sub-Inspectors of Vaccination (including 3 deputed for duty at the Vaccine Depôt) in addition to the 2 Sub-Assistant Surgeons combining vaccination inspection with other duties in Angul. During the year two additional appointments of Sub-Inspectors were sanctioned for the Dhanbad Subdivision in the district of Manbhum. The total number of Vaccinators employed in the province during the year was 1,059 licensed and 208 paid, against 1,049 licensed and 208 paid in the previous year.

In Municipalities and in the districts of Puri, and Angul, vaccination was done by paid Vaccinators; but otherwise the work throughout the province was carried out under the licensing system, except for the employment of paid Vaccinators for short periods to deal with outbreaks of small-pox.

Heretofore Vaccination, in Sambalpur District, was done by paid Vaccinators; but licensing system was introduced from the last working season.

2. Operations performed.—The total number of operations performed during the year amounted to 972,423 as compared with 1,097,676 last year. The decrease amounts to 125,253 which was due to the widespread prevalence of influenza in the whole of the province during the last working season.

Of the total number of operations in the province, 953,535 were performed by the Vaccination Department as compared with 1,084,031 last year. 914,761 operations were primary and 38,774 revaccinations against 1,055,374 primary and 28,657 revaccinations last year.

There was a decrease of 140,613 in the primary operations and an increase of 10,117 in the revaccination during the year.

Of the total operations performed (953,535), 929,964 equal to 97.52 per cent were successful as compared with 1,061,531 equal to 97.92 last year.

The number of operations performed in Municipalities was 43,537 as compared with 41,362 last year.

The number of successful operations in Municipalities was 35,213 for primary and 2,772 for revaccination, as compared with 35,570 and 3,043 respectively last year. The ratios of success in Municipalities were 96.28 per cent for primary and 39.80 per cent for revaccination as compared with 96.23 per cent for primary and 69.12 for revaccination. The number of operations performed in rural areas was 909,998 as compared with 1,042,669 last year. Of the former, 878,188 were primary and 31,810 revaccination against 1,018,414 primary and 24,255 revaccination last year. The number of successes was 870,804 for primary and 21,175 for revaccination against 1,008,095 for primary and 14,823 for re-vaccination last year; the ratios of successes being 99.15 primary and 66.56 revaccination as compared with 98.98 primary and 61.11 revaccination last year.

3. Vaccination in districts.—There was a fall of 16,825 operations in the Patna Division as compared with last year, which was shared by the district of Shahabad (10,664) and that of Gaya (6,206).

With the exception of the district of Muzaffarpur, there was a general fall in the operations in all other districts of Tirhut Division, viz., Saran 11,806, Champaran 1,447, and Darbhanga 6,527. Muzaffarpur recorded an increase of 902 operations.

All the districts of the Bhagalpur Division recorded a decrease in the number of operations with the exception of Purnea which showed an excess of 5,721 operations due perhaps to less prevalence of influenza there. The marked decrease was in the district of Monghyr (11,856).

In Orissa Division all the districts show a decrease in the number of operations; the greatest being in Sambalpur (9,880) and Cuttack (9,712).

There was a general fall in the number of operations in this Division, the greatest being in Ranchi (14,310) and Manbhum (13,222).

4. Vaccination in towns and compulsory areas.—During the year under report the Vaccination Acts were extended to Garhwa Union in Palamau, Dhanbad in Manbhum and Chakradharpur Municipality in Singhbhum. Statement VII shows that during the year, 17,939 children under one year of age, out of an available number of 26,332 or 68.12 per cent were successfully vaccinated.

During the last three years the towns of Bhagalpur and Darbhanga have shown the smallest proportion of work done and the towns of Gaya, Chapra, Monghyr, Cuttack and Balasore have given unsatisfactory returns.

5. Work done in the Native States under the supervision of the Political Agent.—The following tabulated statement shows the results for the last 13 years :—

Year.				Total number of vaccinations.	Total number of revaccinations.
1				2	3
1906-07	...	...	...	165,967	43,498
1907-08	...	...	...	187,150	69,685
1908-09	...	...	...	226,042	97,078
1909-10	...	...	...	269,728	142,911
1910-11	...	...	...	310,962	163,162
1911-12	...	...	...	341,701	179,658
1912-13	...	...	...	387,190	215,438
1913-14	...	...	...	430,720	261,225
1914-15	...	...	...	419,562	260,767
1915-16	...	...	...	454,699	281,913
1916-17	...	...	...	504,948	311,670
1917-78	...	...	...	526,410	330,938
1918-19	...	...	...	426,717	269,970

6. Protection of Infants.—During the year under report the number of children available for vaccination was 944,025 and the number of successful operation was 346,974 equal to 367 per thousand, against 499,705 or 446 per thousand successful operations out of 1,119,606 children available during the last year.

The protection of infants in Municipalities is separately shown in statement VII. It gives a ratio of 681 per thousand of the surviving infant population as compared with 690 in the last year.

7. Incidence and mortality of small-pox.—During the last ten years the total number of deaths from small-pox in the districts of this province has been 75,731.

During the first quinquennium the number of deaths were 29,490 and during the second 46,241. In the last quinquennium the mortality was as follows :—8,979, 14,628, 9,742, 6,687 and 6,205.

The provincial ratios of the mortality from small-pox per 1,000 of population during the last five years have been '22, '42, '28, '19 and '17 respectively.

8. Prevention of small-pox.—Much has been done in the past to prevent small-pox and the mortality from it now, as compared with the pre and early-vaccination days, has been reduced considerably. But it appears from the figures quoted in paragraph above that the decline in the death-rate from small-pox has now come to a degree beyond which it does not show much inclination to fall except in the areas where Vaccination Act has been made compulsory and there the decline is progressive.

Vaccination as a measure for prevention of small-pox has proved its efficacy beyond all doubt and the Vaccination Acts, enforcing compulsory vaccination, have been introduced in all Municipal towns and other important places—like Dhanbad—where life is considered more important and objections to its application are considered to be comparatively few. Opposition to vaccination has also gone down considerably, and I do not see much difference between the opposition offered by the urban and the rural populations. Opposition is now shown not so much to vaccination as to vaccination of an infant before twelve months of age.

The attitude of the people towards vaccination in urban and rural areas being almost the same, I agree with my predecessor in recommending that benefits of the Vaccination Acts be extended to rural areas of the province in the same way as they have been extended to urban areas by making them compulsory throughout the province.

9. Inspection of work.—During the year under report the Deputy Sanitary Commissioners inspected 79,610 primary vaccinations as against 155,456 in the previous year. The decline, in the number of vaccinations inspected, is due to the fact that there was no Deputy Sanitary Commissioner in the South Bihar Circle, for vaccination work.

The inspecting work done during the year by the Deputy Sanitary Commissioners has been comprehensive and valuable. They have submitted reports on the efficiency of the staff and the arrangements of work in 15 districts of the province. Action is being taken on these reports in each case.

The Civil Surgeons of the province inspected 52,467 primary and 6,907 revaccination operations against 65,694 primary and 6,385 revaccination last year. According to the existing system of inspection, vaccinated children are collected from villages, falling in a radius of about five or six miles, at places two or three miles apart, on the road through which the inspecting officer travels. The system of requiring vaccinated children to be brought to fixed places for inspection in an area where Vaccination Act is not compulsory, is illegal; and villagers generally resent in bringing their children for inspection, as the Civil Surgeon of Muzaffarpur remarks that "the system of thorough inspection of the work done in the rural areas has suffered by the spirit of independence pervading villagers—resulting in number of children not being produced—even for short distances for the Civil Surgeon's personal inspection." It is not possible for Civil Surgeons to pay more attention to the vaccination work as Major M. H. Thornely, I.M.S., the Civil Surgeon of Cuttack, points out that "the multifarious nature of the duties of the Civil Surgeon of Cuttack renders it quite impossible for him to give the time and attention necessary for directing and supervising the vaccination work of this large district with its difficulties of communication."

The officers of the subordinate inspecting staff are not trained, nor sufficiently paid to attract better class of men. They cannot, therefore, be trusted much. The only other agency for inspection is that of the Deputy Sanitary Commissioners. Their number is, however, limited to three only for the whole province which is evidently not enough for thorough and detailed inspection of the work in the villages. It does not appear to me possible, therefore, that without increasing the superior inspecting staff, the efficiency of the work can be improved very much.

In this connection I would recommend that the creation of the district sanitary service, which has been lately proposed by Government may be taken up early.

10. Supply of Vaccine.—The Vaccine Depot at Namkum supplied the province with vaccine throughout the year.

The following tabulated statement shows the number of doses manufactured, the number of doses issued, the number of doses lost in storage and manufacture and the number of doses in reserve for five years :—

Year.	No. of doses manufactured.	No. of doses issued.	No. of doses lost in storage and manufacture.	No. of doses in reserve.
1	2	3	4	5
1914-15	771,696	541,259	...	230,437
1915-16	3,127,290	1,798,239	...	1,559,488
1916-17	2,842,710	2,017,730	679,294	1,705,174
1917-18	3,778,318	2,250,072	100,306	3,133,114
1918-19	2,156,720	2,333,233	95,000	2,861,601

The number of calves required for operation has been greatly reduced by the improved technique of operation and by better feeding of calves.

The following tabulated statement shows the number of calves purchased or hired, the number of doses manufactured, the average number of doses yielded per calf, the total gross cost, the total revenue and the average net cost per dose for five years :—

Year.	No. of calves purchased or hired.	No. of doses manufactured.	Average No. of doses yielded per calf.	Total gross cost.	Total revenue.	Average net cost per dose.
1	2	3	4	5	6	7
				Rs.	Rs.	Pies.
1914-15	507	771,696	1522-08	19,367	...	4-8
1915-16	1,267	3,127,290	2468-26	34,537	4,637	1-8
1916-17	1,129	2,842,710	2517-90	31,936	13,518	1-4
1917-18	886	3,778,318	4264-45	22,183	16,610	2-8
1918-19	399	2,156,720	5405-31	29,685	15,962	1-2

The working cost of the Depôt for the year amounted to Rs. 29,685-9-6 against Rs. 22,183-0-11 last year.

Two severe epidemics of Rinderpest broke out during the year under report, and prompt steps were taken to check their spread. There were 120 attacks and 23 deaths and the Depôt had to be closed and calves discharged on both the occasions.

The cost to the Depôt was greater owing to the rise in the price of all materials.

The loss in revenue was due to a fall of about 80,000 doses of Vaccine in the supply to the Native States.

11. Experimental work.—Further experimental work in connection with the manufacture of vaccine was continued during the year. Distilled water was tried as a diluent in place of Glycerine mixture. In the smaller dilutions the pulp and water mixture gave equally good results as the Glycerinated vaccine. In dilutions of 1 in 5 it gave good results when the diluted vaccine was used within two days of the preparation. After this period, the water diluted vaccine appeared to lose potency. The result of the experiment confirms the view that Glycerine serves not only as a diluent but also as a preservative.

Other experiments were done to determine whether crude pulp when rid of moisture by drying and made into vaccine, keeps up potency. The results have been negative. Further experiments will be continued during the rains.

12. Cost of the Department.—The total cost of the Vaccine Department (excluding the Vaccine Depot) during the year, as detailed in Statement II, was Rs. 1,10,479 or Rs. 1,737 less than the previous year. The decrease in cost was due to the introduction of licensing system of vaccination in the district of Sambalpur.

The cost per successful operation was Re. 0-1-10 against Re. 0-1-8 in the previous year. The increase in rate is due to the fall in the number of operations.

13. General.—The discipline and work of the staff have been gradually improving. Owing to the wide spread influenza epidemic in the province the anticipated improvements could not be effected.

The staff in general worked fairly well. The work done by the Deputy Sanitary Commissioners in inspecting vaccination and reporting on the efficiency of the staff was very useful. The supervision exercised by Dr. T. Sebastian over the Vaccine Depot at Nankum has resulted in much improvement of that institution for which he deserves commendation.

S. N. TIWARI,
Offg. Sanitary Commissioner.

Statement II		1919-20		1918-19	
Particulars	Rs.	Rs.	P.	Rs.	P.
Salaries and allowances	1,00,000	1,00,000	00	1,00,000	00
Medical stores	10,000	10,000	00	10,000	00
Transport	5,000	5,000	00	5,000	00
Printing and stationery	2,000	2,000	00	2,000	00
Repairs	1,000	1,000	00	1,000	00
Contingencies	1,479	1,479	00	1,479	00
Total	1,10,479	1,10,479	00	1,12,216	00

No.	Locality	Elevation			Remarks
		Feet	Meters	Feet	
1001
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STATEMENTS.

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Statement No. I.—Showing particulars of Vaccination in the

Number.	District.	Population of district according to the census of 1911.	Average population per square mile.	Average number of vaccinators employed throughout the season.	Total number of persons vaccinated.			Average number of persons vaccinated by each vaccinator.	Total.	
					Male.	Female.	Total.			
1	2	3	4	5	6			7	8	
<i>Patna Division.</i>										
1	Patna ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	1,609,631	777	{ 15 61	6,789 29,372	5,593 27,145	12,169 54,517	811 926	11,806 50,517
2	Gaya ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	2,161,050	458	{ 12 82	2,985 25,270	2,181 24,997	5,467 50,276	465 613	5,077 49,699
3	Shahabad ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	1,905,600	426	{ 9 75	2,120 20,153	1,994 17,321	4,024 37,780	447 498	3,923 37,346
Total of Patna Division		{ By paid Vaccinators ... By licensed Vaccinators ... }	5,676,281	505	{ 36 218	11,395 74,810	10,265 69,363	21,667 144,173	861 661	20,898 143,862
<i>Tirhut Division.</i>										
4	Saran ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	2,380,778	853	{ 8 7	1,154 33,329	1,142 21,140	2,396 64,660	290 743	2,391 61,660
5	Champaran ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	1,908,385	580	{ 4 67	1,879 24,152	1,300 23,504	2,779 47,356	694 796	2,150 47,340
6	Muzaffarpur ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	2,845,514	947	{ 12 75	1,637 43,095	1,610 40,873	3,247 83,038	270 1,119	3,122 83,740
7	Darbhanga ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	2,920,682	875	{ 7 88	1,331 43,384	1,187 40,811	2,518 84,275	359 937	2,187 84,169
Total of Tirhut Division		{ By paid Vaccinators ... By licensed Vaccinators ... }	9,075,359	791	{ 31 317	5,804 144,121	5,129 136,058	10,940 280,179	354 683	10,150 279,938
<i>Bhagalpur Division.</i>										
8	Monghyr ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	2,131,281	513	{ 8 39	2,181 20,402	2,155 25,500	4,336 52,358	554 1,745	4,140 52,353
9	Bhagalpur ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	2,129,318	569	{ 11 63	1,716 27,464	1,441 20,763	3,047 54,021	277 837	2,710 54,007
10	Purnea ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	1,980,637	378	{ 11 52	4,723 27,875	2,634 24,163	7,360 51,978	631 900	1,889 42,828
11	Santal Parganas ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	1,892,751	244	{ 6 62	816 23,165	734 22,622	1,590 45,537	243 734	1,470 44,618
Total of Bhagalpur Division		{ By paid Vaccinators ... By licensed Vaccinators ... }	6,144,117	437	{ 35 107	9,382 105,293	6,859 68,854	16,732 203,894	469 1,081	16,316 193,534
<i>Orissa Division.</i>										
12	Cuttack ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	2,168,129	677	{ 11 67	4,990 25,948	2,955 23,728	7,755 49,676	708 726	3,777 46,956
13	Balasore ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	1,055,528	506	{ 4 59	704 11,474	437 9,619	1,201 21,123	200 704	722 18,693
14	Angul ...	By paid Vaccinators ...	199,865	118	12	4,114	3,398	7,542	628	4,398
15	Puri ...	By paid Vaccinators ...	1,023,402	409	29	18,896	15,803	34,699	1,193	34,327
16	Sambalpur ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	744,193	194	{ 4 19	117 7,583	95 7,531	243 15,119	50 522	193 15,069
Total of Orissa Division		{ By paid Vaccinators ... By licensed Vaccinators ... }	5,151,707	173	{ 60 126	28,741 45,910	22,589 39,806	61,350 84,918	855 673	41,302 80,721

Districts of Bihar and Orissa during the year 1918-19.

Primary Vaccination.				Revaccination.			Percentage of successful cases in which the results were known.		Persons successfully vaccinated per 1,000 of population.	Percentage of unknown cases to total cases.		Average annual number of persons successfully vaccinated during previous five years.		Average annual number of deaths from small-pox during previous five years.	
Successful				Total.	Successful.	Unknown.	Primary.	Revaccination.		Primary.	Revaccination.	Number.	Ratio per 1,000 of population.	Number.	Ratio per 1,000 of population.
Under one year.	One year and under six years.	Total of all ages.	Unknown.	Total.	Successful.	Unknown.	Primary.	Revaccination.							
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
5,090	5,110	11,206	259	261	140	...	97.80	40.44	42.53	2.10	...	62,197	28.64	564	.08
21,008	34,608	56,762	66	...	...	...	99.66	...		0.11	...				
2,230	2,025	5,023	12	390	370	5	99.56	96.10	25.9	.23	1.28	65,539	30.22	605	.02
16,638	31,889	49,456	62	577	485	41	99.66	81.15		.12	7.10				
2,409	1,208	3,616	20	101	76	4	98.79	78.35	22.31	.66	3.96	56,768	30.43	470	.05
12,774	21,549	37,148	22	34	12	6	99.63	42.88		.05	17.04				
10,617	9,039	20,177	297	852	592	9	99.37	70.22	29.11	1.42	1.05	194,524	32.73	1,740	.01
50,508	68,146	117,870	159	611	447	47	99.62	70.25		.10	7.69				
1,065	1,137	2,202	46	5	4	1	93.31	100.00	28.30	1.92	.20	78,030	34.47	262	.05
22,029	41,589	63,628	592	...	...	...	99.31	...		1.01	...				
1,187	978	2,065	15	629	309	45	98.12	62.02	31.96	.69	7.15	59,370	31.05	198	.03
15,829	39,068	47,216	67	7	7	...	99.83	100.00		.14	...				
1,744	1,239	2,983	49	125	35	11	97.10	50.70	30.34	1.33	8.80	67,514	34.26	368	.02
22,421	60,503	83,220	18	199	112	2	99.49	67.14		.02	1.01				
772	1,087	2,468	6	31	15	...	91.29	48.28	29.51	.24	...	65,192	32.49	645	.02
18,467	65,312	83,548	27	36	20	...	99.05	83.33		.13	...				
4,768	4,931	9,749	116	790	363	57	97.14	49.52	29.89	1.13	7.11	320,995	33.17	1,573	.05
78,786	108,092	277,012	704	241	147	2	99.12	62.34		.25	.82				
1,813	2,223	4,125	26	187	97	2	99.89	62.43	29.54	.38	1.10	67,473	37.75	730	.01
17,344	34,092	51,552	...	5	2	...	99.99	40.00		...	...		
1,140	1,492	2,660	98	248	123	26	98.45	53.49	27.59	3.59	10.48	72,125	33.71	645	.03
24,920	29,092	62,091	5	14	11	...	99.95	71.71		.69	...				
945	894	1,890	3	5,289	7,906	89	98.06	54.19	27.14	.16	1.03	51,519	27.43	755	.02
21,833	20,580	42,011	33	9,152	6,870	21	99.52	75.06		.07	.22				
555	777	1,494	11	104	29	11	94.56	4.23	24.77	.74	10.89	55,821	29.11	530	.02
25,523	18,708	44,472	125	849	517	2	10.00	58.15		.28	.22				
4,483	5,383	10,079	1.8	8,910	3,127	127	98.28	61.01	26.27	1.24	2.14	261,968	32.29	2,600	.02
89,670	103,192	192,778	103	10,050	7,489	23	99.28	79.72		.96	2.28				
1,188	2,095	3,674	170	2,978	1,063	759	99.08	37.14	21.58	4.79	19.08	94,868	44.85	653	.05
18,056	26,669	44,328	437	1,720	607	471	99.65	46.72		.16	24.47				
269	370	645	10	479	266	93	98.65	77.28	19.82	1.38	17.93	41,785	39.28	469	.02
2,064	13,190	18,149	243	2,427	1,650	513	99.11	69.98		1.29	21.13				
2,031	1,960	4,099	108	3,179	2,712	94	91.51	89.05	33.85	2.47	2.90	6,280	41.63	7	.03
10,123	20,136	33,138	748	372	235	70	95.92	74.83		2.17	18.81				
100	28	199	...	25	1	9	100.00	6.25	20.64	...	36.00	23,702	31.61	324	.02
11,199	3,729	14,854	80	50	37	...	99.76	74.00		.53	...				
15,760	24,638	41,634	1,033	8,018	4,955	1,028	98.49	61.35	24.68	2.38	12.80	204,904	39.92	1,988	.02
34,110	42,980	70,601	780	4,197	2,194	694	99.54	67.23		.94	22.25				

Number.	District.	Population of district according to the census of 1911.	Average population per square mile.	Average number of vaccinators employed throughout the season.	Total number of persons vaccinated.			Average number of persons vaccinated by each vaccinator.	Total.
					Male.	Female.	Total.		
1	2	3	4	5	6			7	8
<i>Chota Nagpur Division.</i>									
17	Hazaribagh ...	1,288,609	183	4	682	633	1,315	328	1,320
	{ By paid Vaccinators ...			{ 45	17,056	16,334	33,390	742	33,380
	{ By licensed Vaccinators ...			{ 3	2,125	681	2,806	935	1,300
18	Ranchi ...	1,397,073	194	50	15,195	14,696	29,891	598	29,900
	{ By paid Vaccinators ...			{ 4	1,385	651	2,036	509	754
	{ By licensed Vaccinators ...			{ 27	8,032	7,411	15,443	572	14,719
19	Palaman ...	687,710	139	24	6,541	5,025	11,566	481	10,022
	{ By paid Vaccinators ...			{ 48	14,630	13,049	27,679	676	20,696
	{ By licensed Vaccinators ...			{ 6	937	528	1,465	247	785
21	Singhbhum ...	694,394	178	21	7,673	6,925	14,598	695	14,390
	{ By paid Vaccinators ...			{ 41	11,690	7,515	19,205	468	14,089
	{ By licensed Vaccinators ...			{ 191	62,586	58,415	121,001	633	118,041
	Total of Chota Nagpur Division.	5,805,322	206	204	67,000	62,961	129,961	585	98,065
	{ By paid Vaccinators ...			{ 1,059	491,817	402,348	894,165	787	816,090
	{ By licensed Vaccinators ...			{ 1,253	498,820	454,709	953,529	754	914,761
	{ Total ...								
	Total Dispensary Department	...	...	1	66	75	141	141	139
	Total Railways	...	...	...	693	276	969	...	732
	Total Cooly Department	...	...	1	2,951	2,192	5,143	(a) 2,323	1,153
	Total Jails and Cantonments	...	...	2	12,187	548	12,735	(b) 409	2,200
	Grand Total	...	...	1,267	514,623	457,830	972,453	788	919,084

(a) Balasore only.
(b) Cantonments only.

Primary Vaccination.				Re-vaccination.			Percentage of successful cases in which the results were known.		Persons successfully vaccinated per 1,000 of population.	Percentage of unknown cases to total cases.		Average annual number of persons successfully vaccinated during previous five years.		Average annual number of deaths from small-pox during previous five years.	
Successful.				Total.	Successful.	Unknown.	Primary.	Re-vaccination.		Primary.	Re-vaccination.	Number.	Rate per 1,000.	Number.	Rate per 1,000.
Under one year.	Over one and under six years.	Total of all ages.	Unknown.												
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
541	648	1,205	5	92	60	15	98'93	77'01	27'65	'41	16'30	45,739	35'49	214	'16
10,506	13,615	33,346	1	5	...	...	99'98	...							
906	292	1,298	...	1,501	751	9	99'46	50'03	22'97	...	'59	49,364	35'59	71	'06
22,549	6,109	28,658	1	932	733	12	100'00	81'84							
240	412	703	23	1,282	1,227	33	99'16	98'23	29'76	3'05	2'67	26,806	38'96	79	'11
9,822	4,614	14,661	52	724	698	7	99'96	97'35							
1,939	6,668	8,922	654	1,544	998	112	95'23	79'11	24'42	6'82	7'28	68,082	37'53	419	'27
13,652	12,794	26,522	25	1,081	467	65	99'80	48'96							
358	390	745	9	700	325	74	95'00	52'07	22'38	1'14	10'57	20,846	30'02	113	'16
10,341	3,890	14,298	24	218	100	1	98'42	45'87							
4,003	8,500	12,673	691	5,119	3,322	253	96'08	69'09	24'62	4'94	4'94	200,637	35'82	696	'16
76,230	40,668	117,785	103	2,960	2,018	85	99'87	79'19							
37,661	52,494	94,511	2,364	20,705	11,739	1,474	98'03	61'04	28'96	2'29	7'11	1,184,159	34'33	8,666	'25
329,313	473,374	811,500	1,890	18,009	12,708	1,091	99'96	71'93							
346,974	525,868	906,017	4,144	38,774	23,947	2,565	99'49	66'13	...	...	...	...	...	...	...
50	89	139	...	2	...	2	100'00	...	...	...	100'00	...	...	...	...
606	124	639	2	137	93	5	95'30	79'45	...	'27	3'64	...	...	...	...
...	200	698	677	3,900	2,214	1,746	100'00	100'00	...	48'77	44'08	...	...	...	...
222	149	1,905	181	10,466	6,622	602	91'91	69'16	...	7'97	5'75	...	...	...	...
347,652	526,330	900,294	4,004	53,339	33,076	4,920	99'46	68'31	...	'53	9'22	...	...	...	...

Summary.

1	Total number of persons vaccinated.		Total number of operations performed.		Percentage of successful cases in which the results were known.		Average number of persons vaccinated by each vaccinator.		Number of children successfully vaccinated.		Ratio of successful vaccinations per 1,000 of population.	Total cost of Department.	Average cost of each successful case.		
	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Vaccinators employed.	Persons vaccinated by each vaccinator.	Under one year.	One and under 6 years.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14		
BY SPECIAL STAFF.													Rs. a. p.	Rs. a.	
Statement (I) ..	9,14,761	38,774	9,14,761	38,774	99.40	99.13	1,263	754	366,974	525,668	26.96	110,479 5 6	0 1 10		
BY DISPENSARY STAFF.															
Statement III ..	129	2	129	2	100.00	...	(a) 1	129	50	89					
BY OTHER AGENCIES.															
Railways, Cooly Depot, Jails and Cantonments.	4,184	14,563	4,184	14,563	91.64	74.94	(b) 3	1,047	828	373					
Total	9,19,084	53,339	9,19,084	53,339	99.46	68.31	1,267	768	367,852	526,330	26.96	110,479 5 6	0 1 10		

(a) Darbhanga only.

(b) Cooly Department and Cantonments only.

Statement No. II.—Showing the cost of vaccination in the

No.	Circle and district.	European supervising officer.	Expen										
			Pay.	Native supervising officer.	Pay.	Paid vaccinators.	Pay.	Licensed vaccinators.	Pay.	Clerks.	Pay.	Fees, etc.	Pay.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
					Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.
PATNA DIVISION.													
1	Patna			6	1,821 11 4	16	1,399 0 0	61	...	...	...	1	36 0 0
2	Gaya			5	1,881 0 0	12	1,133 2 9	82	...	...	...	2	144 0 0
3	Shahabad			5	2,302 9 4	9	1,001 9 3	7	...	...	...	...	...
	Total of Patna Division			16	6,005 4 8	37	3,523 12 0	218	...	...	...	3	180 0 0
TIRHUT DIVISION.													
4	Saran			4	2,053 0 0	8	660 0 0	87	180 0 0	...	...	...	...
5	Champanan			3	1,162 11 10	4	412 8 0	67	7 8 0	...	...	...	...
6	Muzaffarpur			4	1,460 0 0	12	764 10 8	75	69 15 7	...	...	...	...
7	Darbhanga			4	1,455 2 8	8	589 0 0	88	...	1	60 0 0	...	...
	Total of Tirhut Division			15	6,131 14 6	32	2,417 2 8	317	257 7 7	1	60 0 0	...	...
BHAGALPUR DIVISION.													
8	Mouglhyr			4	1,532 0 0	8	713 0 0	30	...	...	...	2	108 0 0
9	Bhagalpur			5	2,054 5 7	11	1,198 6 0	63	...	...	...	...	...
10	Purnea			4	1,424 5 0	11	1,282 12 11	62	...	...	...	...	...
11	Santal Parganas			7	2,448 3 3	6	777 0 0	62	...	...	...	...	...
	Total of Bhagalpur Division			20	8,068 13 19	36	3,971 2 11	307	...	...	...	2	108 0 0
ORISSA DIVISION.													
12	Cuttack			4	1,432 10 2	11	1,271 0 8	67	...	...	...	...	...
13	Balasore			3	1,398 2 5	5	479 0 0	30	20 0 0	...	...	...	...
14	Angul			3	2,592 6 0	12	1,658 12 0	...	...	...	...	...	...
15	Puri			3	1,117 0 0	29	3,658 4 0	...	...	...	...	...	...
16	Sambalpur			3	1,067 8 0	4	1,121 0 10	29	...	...	...	2	10 0 0
	Total of Orissa Division			16	7,607 10 7	61	8,183 1 6	126	20 0 0	...	...	2	10 0 0
CHOTA NAGPUR DIVISION.													
17	Hazaribagh			4	1,453 1 0	4	317 3 5	45	...	...	...	...	...
18	Ranchi			5	1,046 0 0	4	541 0 0	60	...	...	...	...	...
19	Palamu			3	1,198 8 6	4	489 14 10	27	...	...	...	...	...
20	Manbhum			3	1,313 0 0	24	2,000 1 11	48	...	...	...	...	...
21	Singbhum			3	1,253 13 9	6	334 12 11	21	...	...	...	...	...
	Total of Chota Nagpur Division			18	6,893 7 3	42	3,703 1 1	191	...	...	...	...	...
	Total of Vaccine Circle			85	34,707 2 10	208	21,888 4 2	969	277 7 7	1	60 0 0	7	298 0 0
	ESTABLISHMENT OF THE DEPUTY SANITARY COMMISSIONER, NORTH BIHAR CIRCLE.			1	7,329 1 8	...	...	...	...	2	831 3 11	2	225 6 8
	Ditto SOUTH BIHAR CIRCLE			1	2,250 0 0	...	...	...	...	2	960 0 0	3	293 6 7
	Ditto CHOTA NAGPUR AND ORISSA CIRCLE.			1	7,456 8 9	...	...	...	...	2	895 14 1	2	192 0 0
	Total			3	17,105 10 5	...	...	...	...	6	2,696 2 0	7	710 13 3
	Total of Province			88	51,812 13 3	208	21,888 4 2	1,059	277 7 7	7	2,756 2 0	14	1,008 13 3

Province of Bihar and Orissa during the year 1918-19.

ditto.		Paid from										Number of all successful vaccinations and revaccinations.	Average cost of each successful case.
Total pay of establishment.	Travelling allowance.	Contingencies.		Total cost.	Imperial Fund.	Provincial Fund.	Local Fund.	Municipalities.	Native States.	Total.			
13	14	15	16	17	18	19	20	21	22	23	24	25	
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.		Rs. a. p.	
3,255 11 4	1,223 14 0	...	207 7 0	4,689 0 4	...	3,183 11 10	480 0 0	1,025 4 6	...	4,688 0 4	68,535	0 1 1	
3,158 2 9	1,370 5 4	...	258 13 3	4,793 6 4	...	3,377 5 4	806 8 9	609 7 3	...	4,793 5 4	56,114	0 1 4	
3,394 2 7	401 15 8	...	199 4 3	3,995 6 6	...	2,827 3 0	480 0 0	688 3 6	...	3,995 6 6	41,625	0 1 0	
9,889 0 8	3,002 3 0	...	665 8 6	13,476 12 2	...	9,387 4 2	1,766 8 9	2,322 15 3	...	13,476 12 2	166,274	0 1 3	
2,893 0 0	463 13 0	...	206 2 0	3,562 15 0	...	2,616 13 0	160 0 0	766 2 0	...	3,562 15 0	66,443	0 0 10	
1,582 11 10	1,135 9 8	...	92 2 6	2,810 8 0	...	2,380 7 6	120 0 0	390 0 6	...	2,810 8 0	56,191	0 0 10	
2,294 10 3	1,311 6 3	...	212 14 0	3,818 14 6	...	2,984 4 3	69 15 7	764 10 8	...	3,818 14 6	66,664	0 0 8	
2,096 2 8	1,085 2 3	...	121 0 0	3,302 4 11	...	2,681 4 11	160 0 0	511 0 0	...	3,302 4 11	86,553	0 7 0	
8,805 8 9	3,995 15 2	...	632 2 6	13,494 10 5	...	10,622 13 8	520 15 7	2,341 13 2	...	13,494 10 5	289,853	0 0 9	
2,353 0 0	1,497 0 0	...	193 0 0	3,952 0 0	...	3,011 0 0	261 0 0	690 0 0	...	3,952 0 0	56,376	0 1 1	
3,662 11 7	612 14 0	...	213 5 1	4,688 14 8	...	3,371 6 7	574 8 0	743 0 1	...	4,688 14 8	59,034	0 1 3	
2,707 1 11	1,362 11 7	...	132 7 9	4,102 5 3	...	2,747 0 7	610 12 11	714 7 9	...	4,102 5 3	54,209	0 1 1	
3,215 3 3	2,061 2 2	...	173 3 0	5,459 8 5	...	4,604 3 5	270 0 0	685 8 0	...	5,459 8 5	46,659	0 1 10	
12,148 0 0	5,343 11 9	...	710 15 10	18,202 12 4	...	13,733 10 7	1,716 4 11	2,752 12 10	...	18,202 12 4	216,478	0 1 4	
2,703 10 10	1,024 14 11	...	196 5 6	3,925 15 3	...	2,547 9 1	588 5 1	791 1 1	...	3,925 15 3	51,845	0 1 1	
1,697 2 5	219 14 3	...	60 0 0	2,177 0 8	...	1,698 0 8	139 0 0	249 0 0	...	2,177 0 8	20,943	0 1 7	
4,246 2 0	797 10 0	...	23 8 3	5,007 4 3	...	5,107 4 3	...	...	...	5,007 4 3	6,761	0 11 10
4,775 4 0	1,222 8 8	...	66 11 0	6,064 7 8	...	2,430 0 8	3,502 4 0	162 3 0	...	6,064 7 8	33,543	0 2 11	
2,198 8 10	817 9 10	...	39 5 6	3,055 8 2	...	1,975 6 8	881 8 0	198 9 6	...	3,055 8 2	15,361	0 3 2	
15,820 12 1	4,022 9 8	...	407 14 3	20,251 4 0	...	13,648 5 4	5,211 1 1	1,391 13 7	...	20,251 4 0	1,28,442	0 2 6	
1,800 4 5	1,056 5 6	...	89 1 6	2,945 11 5	...	2,038 8 0	59 12 4	260 7 1	...	2,945 11 5	35,652	0 1 4	
2,187 0 0	1,082 14 0	...	60 0 0	3,229 14 0	...	2,788 14 0	...	541 0 0	...	3,229 14 0	31,870	0 1 8	
1,688 7 4	894 2 3	...	49 2 0	2,631 11 7	...	2,141 12 9	286 6 10	203 8 0	...	2,631 11 7	29,472	0 2 1	
3,333 1 11	848 1 4	...	70 0 0	4,251 3 3	...	2,197 5 4	1,823 6 6	230 7 5	...	4,251 3 3	37,867	0 1 9	
1,597 10 8	1,065 8 9	...	52 0 0	3,305 3 5	...	3,690 12 19	...	214 6 7	...	3,305 3 5	15,543	0 3 4	
10,596 8 4	5,546 15 10	...	320 3 6	16,463 11 8	...	12,847 4 11	2,166 9 8	1,449 12 1	...	16,463 11 8	1,41,303	0 1 10	
57,240 14 7	21,911 7 5	...	2,736 12 7	81,889 2 7	...	60,239 6 8	11,360 8 0	10,289 3 11	...	81,889 2 7	9,42,370	0 1 4	
8,385 12 3	3,638 2 9	...	548 11 7	11,972 10 7	...	11,972 10 7	...	...	...	11,972 10 7	...	...
3,682 6 7	1,174 2 9	...	624 15 8	5,281 9 0	...	5,281 9 0	...	...	...	5,281 9 0	...	...
8,544 6 10	2,691 8 6	...	209 0 0	11,335 15 4	...	11,335 15 4	...	...	...	11,335 15 4	...	...
20,512 9 8	6,803 14 0	...	1,573 11 3	28,590 3 11	...	28,590 3 11	...	...	...	28,590 3 11	...	...
17,753 8 3	28,715 5 5	...	4,010 7 10	1,10,479 5 8	...	68,929 9 7	11,360 8 0	10,259 3 11	...	1,10,479 5 8	9,42,370	0 1 10	

B—DISPENSARY VACCINATION.

Statement No. III.—Showing Dispensary Vaccination in the Province of Bihar and Orissa during the year 1918-19.

District.	Number of dispensaries in each district to which a vaccinator is attached.	Average number of vaccinators attached to dispensaries during the year.	Total number of persons vaccinated.	Average number of persons vaccinated by each vaccinator.	Primary vaccination.					Re-vaccination.			Percentage of successful cases in which the results were known.		Percentage of unknown cases to total cases.	
					Total.	Successful.			Unknown.	Total.	Successful.	Unknown.	Primary.	Re-vaccination.	Primary.	Re-vaccination.
						Under one year.	Over one and under six years.	Total of all ages.								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Patna
Gaya
Shahabad
Saran
Champaran
Muzaffarpur
Darbhanga ...	1	1	141	141	139	60	89	139	...	2	...	2	100.00	...	...	100.00
Monghyr
Bhagalpur
Purnea
Santal Parganas
Cuttack
Balasore
Angul
Puri
Sambalpur
Hazaribagh
Ranchi
Palamu
Manbhum
Singhbhum
Total ...	1	1	141	141	139	60	89	139	...	2	...	2	100.00	...	...	100.00

Comparative Statement No. IV - Showing the number of votes received by each candidate, and the number of electors cast for each State, in the election of 1876.

State	1876		1872		1868		Total
	Majority	Minority	Majority	Minority	Majority	Minority	
Alabama	102,000	100,000	100,000	100,000	100,000	100,000	302,000
Arkansas	100,000	100,000	100,000	100,000	100,000	100,000	300,000
California	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Colorado	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Connecticut	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Delaware	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Florida	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Georgia	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Idaho	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Illinois	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Indiana	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Iowa	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Kansas	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Kentucky	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Louisiana	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Maine	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Massachusetts	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Michigan	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Minnesota	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Mississippi	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Missouri	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Montana	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Nebraska	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Nevada	100,000	100,000	100,000	100,000	100,000	100,000	300,000
New Hampshire	100,000	100,000	100,000	100,000	100,000	100,000	300,000
New Jersey	100,000	100,000	100,000	100,000	100,000	100,000	300,000
New Mexico	100,000	100,000	100,000	100,000	100,000	100,000	300,000
New York	100,000	100,000	100,000	100,000	100,000	100,000	300,000
North Carolina	100,000	100,000	100,000	100,000	100,000	100,000	300,000
North Dakota	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Ohio	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Oklahoma	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Oregon	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Rhode Island	100,000	100,000	100,000	100,000	100,000	100,000	300,000
South Carolina	100,000	100,000	100,000	100,000	100,000	100,000	300,000
South Dakota	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Tennessee	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Texas	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Vermont	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Virginia	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Washington	100,000	100,000	100,000	100,000	100,000	100,000	300,000
West Virginia	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Wisconsin	100,000	100,000	100,000	100,000	100,000	100,000	300,000
Wyoming	100,000	100,000	100,000	100,000	100,000	100,000	300,000

COMPARATIVE STATEMENT No. IV.

Comparative Statement No. IV.—Showing the number of persons primarily vaccinated, and the number of those per

Establishment.	Persons primarily								
	1909-10		1910-11		1911-12		1912-13		
	Total Number.	Number successfully vaccinated	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	
1	2	3	4	5	6	7	8	9	
Government
Municipal	46,047	43,550	46,553	44,671	46,769	44,879	43,379	42,311
Local Fund	92,291	91,182	97,068	95,561	96,381	95,057	86,551	85,065
Dispensaries	586	472	516	415	384	303	188	185
Licensed Vaccinators	1,053,044	1,052,100	1,118,587	1,109,896	1,135,713	1,128,318	1,133,310	1,126,927
Total	1,191,968	1,187,304	1,232,724	1,248,543	1,279,247	1,268,497	1,263,428	1,255,388

COMPARATIVE STATEMENT No. IV.

sons who were successfully vaccinated in the Province of Bihar and Orissa in each of the undermentioned official years.

vaccinated.

1913-14		1914-15		1915-16		1916-17		1917-18		1918-19	
Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.
10	11	12	13	14	15	16	17	18	19	20	21
...	...	649	515	10,277	10,046	3,963	3,441	6,984	6,060	6,637	5,941
44,167	42,480	47,235	45,310	43,099	41,611	38,645	37,226	37,586	36,107	36,573	35,213
83,592	81,790	76,264	75,266	94,056	84,626	80,353	73,103	82,772	77,911	59,639	58,495
186	186	178	176	285	215	202	202	181	177	139	139
1,149,467	1,143,922	1,114,753	1,109,554	1,065,023	1,059,266	922,991	913,264	931,549	926,281	816,096	811,506
1,276,412	1,268,368	1,239,079	1,230,821	1,212,740	1,195,824	1,046,154	1,027,236	1,059,072	1,046,526	919,084	900,294

Statement No. V.—Showing particulars of vaccination

District.	Total Number of persons vaccinated.		Total number inspected—								Percentages of	
			By Deputy Sanitary Commissioners or Civil Surgeons.				By Native Superintendents or other Inspecting Officers.				By Deputy Sanitary Civil	
			Deputy Sanitary Commissioners.		Civil Surgeons.		District Inspectors.		Sub-Inspectors.		Deputy Sanitary Commissioners.	
	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.
1	2	3	4	5	6	7	8	9	10	11	12	13
Patna ...	68,728	1,127	...	...	619	290	21,018	...	21,145	...	..	...
Gaya ...	55,072	1,583	...	...	...	...	11,588	258	28,391	966	...	...
Shahabad ...	41,447	471	...	...	2,328	...	3,153	...	8,889	...	...	...
Saran ...	67,254	705	5,034	...	6,079	627	17,167	...	28,020	...	7.48	...
Champaran ...	60,041	983	2,094	...	5,068	347	6,880	...	12,012	...	7.80	...
Munaffarpur ...	66,809	907	6,795	...	9,415	674	15,094	...	21,592	2	7.82	...
Darbhanga ...	66,831	315	8,055	...	4,032	226	18,532	11	30,056	...	9.06	...
Monghyr ...	66,602	192	85	...	3,118	...	8,334	32	15,928	31	15	...
Bhagalpur ...	66,811	3,849	8,150	...	6,891	...	16,503	...	35,345	2	14.24	...
Purnea ...	44,716	14,532	8,538	...	1,193	34	4,685	589	10,104	1,982	19.09	...
Santal Parganas ...	66,203	1,207	10,442	...	1,603	...	5,092	...	15,321	614	22.00	...
Cuttack ...	50,853	6,044	4,963	...	604	108	8,010	320	11,284	195	9.56	...
Balasore ...	19,995	4,631	2,501	...	314	318	2,127	61	2,889	133	12.61	...
Angul ...	4,368	3,174	2,617	...	1,092	...	1,346	546	1,770	1,297	46.17	...
Puri ...	24,374	427	3,671	...	341	54	9,496	...	14,591	...	11.27	...
Sambalpur ...	15,208	285	2,288	...	1,197	206	4,382	...	4,658	...	14.97	...
Hararibagh ...	25,304	575	...	...	2,720	...	6,294	...	11,935	...	...	...
Ranchi ...	30,360	2,440	3,950	...	1,955	...	2,429	...	11,817	267	13.00	...
Palamu ...	16,256	4,505	...	...	2,159	2,813	3,619	49	7,322	79	...	...
Manbhum ...	26,630	3,712	3,108	...	469	1,131	392	...	2,945	...	8.47	...
Singbhum ...	15,182	1,112	5,420	...	1,412	159	3,664	221	8,237	246	85.61	...
TOTAL ...	919,681	63,539	79,610	...	52,467	6,907	170,405	2,087	304,224	5,844	8.66	...

verified by Inspecting Officers during the year 1918-19.

Inspection to total number vaccinated.						Percentage of cases found successful to total number inspected.										Percentage of successful cases reported by vaccinators.	
Commissioners or Surgeons.		By Native Superintendents or other Inspecting Officers.				By Deputy Sanitary Commissioners or Civil Surgeons.				By Native Superintendents or other Inspecting Officers.							
Civil Surgeons.		District Inspectors.		Sub-Inspectors.		Deputy Sanitary Commissioners.		Civil Surgeons.		District Inspectors.		Sub-Inspectors.					
Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.		
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29		
90	88.73	80.58	...	80.76	...	...	...	87.25	82.75	97.55	...	98.36	...	86.81	85.72
...	...	21.04	16.24	61.55	62.72	...	...	...	...	84.07	94.13	90.54	83.57	99.37	87.53
5.71	...	7.67	...	21.44	...	...	...	85.09	...	99.45	...	98.22	...	88.05	60.24
9.78	74.75	25.00	...	41.66	...	94.16	...	98.38	59.57	98.70	...	92.20	...	95.71	79.95		
10.80	85.30	13.74	...	24.04	...	89.73	...	99.79	50.14	99.65	...	99.26	...	99.32	49.84		
1.08	80.35	17.37	...	24.85	30	84.93	...	95.52	61.81	96.38	...	95.11	...	99.20	45.54		
4.64	71.74	21.37	24.44	84.61	...	88.64	...	99.25	81.76	99.42	05	97.92	...	99.59	44.45		
5.51	...	15.81	16.66	28.19	16.14	100.00	...	99.83	...	99.76	53.12	99.41	35.48	99.94	51.63		
12.12	...	29.04	...	62.21	05	88.25	...	99.88	...	98.61	...	96.32	...	99.83	56.01		
2.64	23	11.14	4.02	22.50	13.62	79.19	...	91.14	76.46	98.37	53.51	91.29	68.01	99.45	67.01		
31.06	...	32	...	33.16	42.68	89.81	...	99.45	...	99.08	...	99.15	49.90	99.62	50.08		
11.09	3.27	15.75	5.29	29.22	3.22	69.62	...	99.29	30.80	99.63	59.31	99.68	43.58	98.41	29.09		
1.57	6.44	10.83	1.23	14.45	2.69	67.01	...	95.54	43.08	98.40	47.54	88.95	69.16	91.89	39.91		
24.77	...	30.61	17.20	40.72	40.86	59.94	...	95.28	...	99.05	81.68	9,427	99.2	82.46	85.44		
90	12.64	27.73	...	45.45	...	67.94	...	98.24	88.88	96.24	...	97.40	...	99.78	64.16		
7.11	72.28	28.70	...	30.50	...	85.62	...	99.66	82.82	96.21	...	97.83	...	99.76	70.17		
7.70	...	17.82	...	31.05	...	...	...	99.11	...	98.98	...	98.75	...	99.71	85.22
3.65	...	7.99	...	29.04	15.04	79.13	...	99.45	...	93.48	...	99.71	91.55	93.96	61.84		
13.46	65.32	21.64	1.08	45.08	1.75	...	...	98.67	100.00	99.85	100.00	99.98	100.00	98.75	99.01
1.28	30.46	98	...	7.82	...	82.87	...	100	77.06	91.71	...	81.55	...	96.96	76.58		
90.28	14.29	25.43	19.87	54.21	12.12	70.33	...	94.83	32.70	89.33	40.72	82.56	44.39	99.15	42.98		
6.78	12.91	18.54	3.90	23.10	10.05	81.64	...	98.42	77.19	97.91	74.74	96.12	77.82	97.93	62.20		

Statement No. VI.—Showing side by side the ratios, per 1,000 of population, of Deaths from

District.	1900-0		1910-11		1911-12		1912-13	
	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.
1	2	3	4	5	6	7	8	9
Patna ...	·23	51,589	·30	45,665	·09	48,687	·07	48,768
Gaya ...	·62	74,725	·07	68,104	·07	69,923	·008	66,965
Shahabad ...	·67	46,311	·04	89,890	·02	36,809	·006	47,086
Saran ...	·84	76,930	·07	86,741	·03	83,221	·006	85,339
Champaran ...	·44	63,172	·02	50,887	·63	60,354	·07	55,486
Muzaffarpur ...	·22	98,808	·06	101,895	·05	102,536	·04	101,406
Darbhanga ...	·29	83,005	·07	84,025	·06	83,343	·01	93,546
Monghyr ...	·30	79,069	·11	85,497	·09	89,123	·08	84,475
Bhagalpur ...	·24	77,682	·26	74,438	·43	80,294	·41	77,274
Purnea ...	·36	61,698	·39	63,167	·24	59,409	·14	56,916
Santal Parganas ...	·36	67,015	·07	67,446	·08	61,909	·19	60,236
Cuttack ...	·12	134,160	·007	139,487	·002	153,747	·01	187,175
Balasore ...	·56	44,340	·41	56,052	·19	63,287	·006	68,271
Angul ...	...	7,602	...	9,353	...	8,207	...	5,906
Puri ...	·16	52,438	·007	53,738	·006	53,619	·02	55,642
Sambalpur ...	·04	27,124	·08	83,399	...	33,153	·04	25,953
Hazaribagh ...	·42	42,659	·01	50,075	·006	46,544	·02	46,150
Ranchi ...	·81	46,968	·07	57,541	·02	48,913	·004	51,096
Palamu ...	1·42	81,133	·11	21,059	·008	24,732	...	28,683
Manbhum ...	·21	58,160	·01	60,036	·0006	60,420	·005	61,191
Singhbhum ...	·12	17,409	·08	26,593	·004	32,841	·05	20,254
Total ...	·45	1,241,997	·10	1,283,638	·08	1,288,620	·06	1,270,859

Small-pox and the number of successful vaccinations during the 10 years ending 1918-19.

1913-14		1914-15		1915-16		1916-17		1917-18		1918-19	
Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.
10	11	12	13	14	15	16	17	18	19	20	21
.17	48,480	.48	57,665	.71	68,438	.28	67,870	.15	68,529	.13	68,535
.03	67,817	.10	65,855	.68	75,641	.37	53,130	.18	62,246	.21	56,114
.09	53,812	.32	62,079	.45	65,016	.26	51,176	.10	51,858	.02	41,625
.06	81,699	.06	80,739	.15	79,608	.27	74,895	.16	77,721	.07	67,413
.02	63,100	.10	64,143	.14	68,255	.07	49,091	.11	51,755	.14	50,191
.01	108,052	.09	105,292	.24	104,624	.20	88,702	.09	85,898	.02	86,664
.06	93,735	.24	97,760	.41	95,237	.28	96,020	.07	93,203	.08	86,555
.48	89,024	.46	89,749	.42	87,999	.17	67,229	.10	68,361	.05	56,576
.31	75,244	.35	75,831	.38	74,532	.22	66,899	.22	68,166	.09	59,034
.22	60,587	.30	58,496	.38	51,206	.33	53,018	.64	49,450	.52	54,209
.27	64,815	.18	53,182	.37	57,558	.43	46,826	.14	56,728	.06	46,659
.01	124,227	.06	113,297	.69	89,925	.46	73,415	.81	62,177	.89	51,815
.11	69,059	.90	53,281	.90	38,609	.24	22,173	.03	25,800	.09	20,942
...	7,945	...	7,689	.01	9,686	.15	9,226	.01	6,956	.06	6,751
.07	47,269	.02	33,820	.30	37,595	.52	29,228	.26	34,639	.75	33,543
.05	25,063	.02	27,561	.75	22,606	1.09	19,938	.24	23,345	.07	15,361
.02	51,777	.03	48,299	.49	46,709	.19	42,148	.07	39,791	.07	35,632
.01	49,989	.08	50,958	.12	52,111	.05	43,667	.03	47,094	.04	31,870
.07	21,459	.10	28,327	.17	31,808	.15	25,542	.06	26,893	.06	20,472
.02	61,316	.43	73,369	.63	54,056	.23	49,379	.02	52,189	.05	37,807
.09	23,496	.45	25,909	.28	19,526	.12	17,429	.09	17,872	.10	15,542
.11	1,292,965	.22	1,273,285	.42	1,230,745	.28	1,053,015	.10	1,070,784	.17	942,370

Statement No. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1918-19.

District.	Towns.	Number of births during the year ending 31st March 1919.	Number of deaths amongst infants under one year during the year ending 31st March 1919.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1919.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Patna	Patna	3,275	630	2,328	1st October 1884.
	Bihar	1,072	171	781	1st April 1887.
	Dinapur	1,010	166	674	28th January 1891.
	Barh	206	77	185	1st April 1887.
	Khagole	198	54	109	12th July 1910.
	Total	5,851	1,098	4,077	
Gaya	Gaya	2,203	615	995	1st January 1883.
	Tikari	135	29	102	3rd January 1891.
	Daudnagar	305	67	107	Ditto.
	Total	2,643	711	1,204	
Shahabad	Arrah	1,389	347	1,042	20th July 1885.
	Buxar	434	132	347	1st April 1887.
	Dumraon	436	82	151	Ditto.
	Jagadispur	279	54	267	20th December 1890.
	Sassaram	928	552	551	1st April 1887.
	Bhabhua	186	46	147	Ditto.
	Total	3,652	1,213	2,505	
	Total of Patna Division.	12,146	3,022	7,786	
Saran	Chapra	1,434	347	560	1st April 1887.
	Revelganj	414	88	221	12th December 1890.
	Siwan	448	91	243	1st April 1887.
	Total	2,296	524	1,024	
Champanan	Motihari	420	93	348	1st April 1887.
	Bettiah	814	216	310	Ditto.
	Total	1,234	319	658	

Statement No. VII.—Showing the protection afforded to infants in each town in the Provinces of Bihar and Orissa during the year 1918-19—contd.

District.	Towns.	Number of births during the year ending 31st March 1919.	Number of deaths amongst infants under one year during the year ending 31st March 1919.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1919.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Muzaffarpur	Muzaffarpur ...	1,169	84	1,060	1st January 1886.
	Sitamarhi ...	379	72	218	1st April 1887.
	Hajipur ...	653	197	252	1st May 1890.
	Lalganj ...	293	72	214	1st April 1887.
	Total ...	2,494	425	1,744	
Darbhanga	Darbhanga ...	2,030	374	574	24th May 1884.
	Roserha ...	301	62	96	3rd January 1891.
	Samastipur ...	233	58	54	25th July 1910.
	Madhubani ...	515	58	48	1st April 1887.
	Total ...	3,079	552	772	
	Total of Tirhut Division.	9,103	1,820	4,198	
Monghyr	Monghyr ...	1,768	380	631	15th November 1882.
	Jamalpur ...	1,060	241	632	Ditto.
	Total ...	2,828	621	1,263	
Bhagalpur	Bhagalpur ...	1,616	335	679	15th February 1884; withdrawn on 16th October 1895; re-extended on 18th August 1898.
	Colgong ...	167	47	39	Ditto; re-extended on 19th December 1901.
	Total ...	1,783	382	718	
Purnea	Purnea ...	296	70	163	1st July 1887.
	Kishanganj ...	206	35	67	12th November 1892.
	Katihar ...	333	40	77	8th August 1910.
	Forbesganj ...	133	31	78	9th August 1912.
	Total ...	968	176	385	

Statement No. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1918-19—contd.

District.	Towns.	Number of births during the year ending 31st March 1919.	Number of deaths amongst infants under one year during the year ending 31st March 1919.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1919.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Santal Parganas ...	Sahibganj ...	462	101	263	1st May 1884.
	Deoghar ...	219	34	61	Ditto.
	Dumka ...	191	44	63	Notifications, dated the 9th April 1884, and 3rd August 1910.
	Madhupur ...	236	46	48	22nd August 1910.
	Total ...	1,108	225	435	
Total of Bhagalpur Division.		6,687	1,404	2,801	
Cuttack ...	Cuttack ...	1,061	235	469	1st September 1884.
	Kendrapara ...	384	106	144	7th February 1888.
	Jajpur ...	334	87	69	Ditto.
	Total ...	1,779	428	682	
Balasore ...	Balasore ...	457	227	93	7th February 1888.
Puri ...	Puri ...	650	202	201	Ditto.
Sambalpur ...	Sambalpur ...	239	98	160	7th March 1895.
	Total of Orissa Division.	3,125	955	1,156	
Hazaribagh ...	Hazaribagh ...	536	123	247	1st January 1885.
	Chatra ...	293	76	140	1st August 1885.
	Giridih ...	282	43	109	8th September 1910.
	Total ...	1,111	242	496	
Ranchi ...	Ranchi ...	712	118	780	1st April 1887.
	Lohardaga ...	133	19	126	25th June 1892.
	Total ...	855	137	906	

Statement No. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1918-19—concl'd.

District.	Towns.	Number of births during the year ending 31st March 1919.	Number of deaths amongst infants under one year during the year ending 31st March 1919.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1919.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Palamau	Daltonganj	269	48	107	9th October 1890.
Manbhum	Purulia	356	61	310	1st January 1887.
	Raghunathpur	156	43	17	9th February 1894.
	Jhalda	184	24	63	9th July 1892.
	Total	696	128	390	
Singhbhum	Chaibassa	308	79	198	20th June 1892.
	Chakradharpur	108	20	28	13th January 1919.
	Total	416	99	226	
	Total of Chota Nagpur Division.	3,078	606	2,018	
	Total for the Province	34,139	7,807	17,939	

Provincial Statement showing the different kinds of lymph

District.	Primary vaccination.											
	Direct from the calf.					With lanoline or glycerine lymph.					Arm-to-arm	
	Total.	Successful.	Unsuccessful.	Unknown.	Percentage of successful cases.	Total.	Successful.	Unsuccessful.	Unknown.	Percentage of successful cases.	Total.	Successful.
1	2	3	4	5	6	7	8	9	10	11	12	13
Patna	68,726	67,907	487	332	98.61	...	...
Gaya	55,073	54,723	276	74	99.36	...	...
Shahabad	41,447	41,154	216	77	99.29	...	...
Saran	67,255	66,072	539	694	98.16	...	...
Champanan	50,41	49,701	186	154	99.31	...	...
Muzaffarpur	86,869	86,212	591	66	99.24	...	...
Darbhanga	86,831	86,403	273	35	99.64	...	...
Monghyr	56,592	56,477	9	16	99.95	...	...
Bhagalpur	56,811	56,628	80	103	99.67	...	...
Purnea	44,715	44,471	208	36	99.45	...	...
Santal Parganas	46,203	45,982	85	136	99.32	...	...
Cuttack	50,833	50,048	198	607	98.41	...	...
Balasore	19,995	18,974	191	830	94.89	...	...
Angul	4,368	4,030	221	108	92.46	...	...
Puri	34,374	33,269	390	745	96.78	...	...
Sambalpur	15,208	15,153	35	80	99.24	...	...
Hazaribagh	35,394	35,142	154	8	99.54	...	...
Ranchi	30,369	30,361	7	1	99.97	...	...
Palamau	16,158	16,114	57	87	99.11	...	...
Maabhum	36,639	35,450	498	682	96.78	...	...
Singbhum	15,192	15,064	95	33	99.15	...	...
TOTAL	919,064	909,294	4,886	4,904	98.93	...	...

II.

and their rates of success during the year 1918-19.

Reracination.																	
vaccination.			Direct from the calf.					With lanoline or glycerine lymph.					Arm-to-arm vaccination.				
Unsuccessful.	Unknown.	Percentage of successful cases.	Total.	Successful.	Unsuccessful.	Unknown.	Percentage of successful cases.	Total.	Successful.	Unsuccessful.	Unknown.	Percentage of successful cases.	Total.	Successful.	Unsuccessful.	Unknown.	Percentage of successful cases.
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
...	1,127	628	481	18	55.72	...	...	...	...	...
...	1,588	1,391	151	46	87.59	...	...	...	...	...
...	609	471	139	59	70.40	...	...	...	...	...
...	705	421	169	115	59.71	...	...	...	...	...
...	983	490	252	111	49.84	...	...	...	...	...
...	967	452	392	123	46.74	...	...	...	...	...
...	315	152	117	46	48.25	...	...	...	...	...
...	192	90	91	2	51.56	...	...	...	...	...
...	3,849	2,406	1,359	84	62.50	...	...	...	...	...
...	14,532	9,738	4,685	109	67.01	...	...	...	...	...
...	1,207	677	508	22	56.08	...	...	...	...	...
...	6,044	1,797	3,025	1,222	29.73	...	...	...	...	...
...	4,931	1,968	606	2,357	39.91	...	...	...	...	...
...	3,174	2,712	368	94	85.44	...	...	...	...	...
...	427	274	82	71	64.16	...	...	...	...	...
...	285	208	64	13	72.98	...	...	...	...	...
...	575	490	65	20	83.22	...	...	...	...	...
...	2,440	1,509	9.0	21	61.84	...	...	...	...	...
...	4,505	4,758	84	63	96.73	...	...	...	...	...
...	3,712	2,357	1,111	2.4	63.49	...	...	...	...	...
...	1,112	478	554	80	42.98	...	...	...	...	...
...	53,339	33,976	15,343	4,920	62.01	...	...	...	...	...



