

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

Contributors

Bihar and Orissa (India)

Publication/Creation

Patna : Government Press, [1921]

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



FOR THE YEAR

1920-21



BY

MAJOR W. C. ROSS, M.B., CH.B., D.P.H., I.M.S.,
Sanitary Commissioner, Bihar and Orissa.



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PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRINTING, BIHAR AND ORISSA
1921.

[Price—Indian, 12 annas.]

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ANNUAL VACCINATION REPORT

BIHAR AND ORISSA.

FOR THE YEAR

1920-21.

1. Staff.—Dr. S. N. Tiwari was in charge of the Department from 1st April to 11th October 1920 and Major W. C. Ross, I.M.S., from the 12th October 1920 to 31st March 1921.

The office of the Deputy Sanitary Commissioner, North Bihar Circle, was held by Dr. B. P. Muzumdar throughout the year except for two months and seventeen days when he was on privilege leave and Dr. T. Sebastian remained in charge of the Chota Nagpur and Orissa Circle and in supervising charge of the Vaccine Depot during the year except for five months and ten days when he also availed himself of privilege leave and was on special duty at Bhagalpur. The office of the Deputy Sanitary Commissioner, South Bihar Circle, was held by Dr. S. N. Tiwari throughout the year except for a period of less than four months when Dr. C. Trivedi was officiating as Deputy Sanitary Commissioner.

The inspecting staff consisted of 20 District Inspectors of Vaccination and 68 Sub-Inspectors of Vaccination (including three deputed for duty at the Vaccine Depot), in addition to the two Sub-Assistant Surgeons combining vaccination inspection with other duties in Angul. The total number of vaccinators employed in the Province during the year was 1,088 licensed and 227 paid, against 1,067 licensed and 221 paid in the previous year.

In Municipalities and in the district of Puri, 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 by District Boards, and employed temporarily by Civil Surgeons for short periods to deal with outbreaks of small-pox.

In previous years vaccination in Angul was carried out by paid vaccinators, but the licensing system was introduced during the year under report.

2. Operations performed.—The total number of operations performed during the year amounted to 1,060,485 as compared with 1,054,905 last year. The increase amounts to 5,580, which is not very satisfactory as compared with the previous year. Many reports were received of the unwillingness of the people to have their children vaccinated, and of increasing difficulties in realizing fees. As the year was a healthy one, these difficulties cannot be attributed to the prevalence of epidemic disease. They are probably to some extent of an economic nature and due to the increased cost of living, but also to a considerable extent due to political propaganda. Of the total number of operations in the Province, 1,041,481 were performed by the Vaccination Department as compared with 1,020,630 last year. 966,334 operations were primary and 75,147 revaccinations as against 920,075 primary and 100,555 revaccinations last year.

There was an increase of 46,259 in the primary operations and decrease of 25,408 in revaccinations during the year. Of the total operations performed (1,041,481), 1,002,986 equal to 96.29 per cent. were successful as compared with 975,537 equal to 95.58 last year. The number of operations performed in Municipalities fell by 13,184 as compared with last year's returns. The total number of operations performed was 43,903 and the number of successful operations was 36,870, of which 31,541 were primary and 5,329 were revaccinations as compared with 35,428 and 10,372 respectively last year.

The ratios of success in Municipalities were 95.09 per cent. for primary operations and 48.98 per cent. for revaccinations as compared with 96.24 per cent. and 51.15 per cent. respectively last year. The number of operations performed in rural areas was 997,578 as compared with 963,543 last year and the ratios of successes were 99.15 per cent. for primary operations and 62.23 for revaccinations.

3. Vaccination in Districts.—Of the three districts of the Patna Division, Shahabad reported a large increase in the number of operations performed (20,229) whilst Patna reported a small increase and Gaya a decrease of over 5,000. Small-pox was prevalent during the year in Gaya.

There was a general moderate increase in the number of operations reported from all the districts of the Tirhut Division.

The districts of the Bhagalpur Division also recorded small increases except Monghyr, in which district considerable difficulty was experienced in carrying out the work of vaccination owing to non-co-operation propaganda.

With the exception of Angul all the districts of Orissa recorded increases in the number of operations, the greatest increase being in Puri.

There was a general fall in the number of operations returned from the districts of Chota Nagpur, the greatest decrease being in Manbhum (18,306).

4. Vaccination in Towns and Compulsory Areas.—During the year under report the Vaccination Acts were extended to Husainabad Union in Palamau.

Statement VII shows that during the year, 17,066 children under one year of age, out of an available number of 23,705 or 59.45 per cent. were successfully vaccinated.

The towns of Monghyr, Bhagalpur (again) and Darbhanga (again) show the smallest proportion of work done, and the towns of Chapra, Purnea, Cuttack, Balasore and Hazaribagh have also given unsatisfactory returns.

5. Work done in the Native States under the Supervision of the Political Agent.—Vaccination work in the Orissa Feudatory States has steadily developed during recent years under the direction and encouragement of the Political Agent.

Both vaccination and to a large extent revaccination are practically compulsory in the majority of these States.

During the year under report 201,433 primary operations and 348,149 revaccinations were performed as compared with 315,878 and 364,225 respectively in the previous year. As the total population of the Feudatory States is under four millions, these figures are rather extraordinary when compared with the provincial figures, which show a total of roughly one million forty-one thousand operations performed amongst a population of 34,489,846. The number of children born each year in the Feudatory States may be estimated roughly at two lakhs, and of these a considerable number, certainly over 60,000, died in infancy.

6. Protection of infants.—During the year under report the number of children under one year available for vaccination was 978,806 and the number of successful operations was 377,981 equal to 386 per thousand, against 327,955 or 391 per thousand successful operations out of 838,706 children available during the previous year. The protection of infants in Municipalities is separately shown in Statement VII. It gives a ratio of 594 per thousand of the surviving infant population as compared with 743 in the previous year.

These figures are unsatisfactory as they show that more than half the total number of operations are performed on children over one year of age, whilst the ratio of protected children under one year of age has fallen to below 50

per thousand, the total number of operations performed is still in excess of the total number of infants available, as it always has been. In previous years the excess has been very marked, and as there has been a constant excess it must be inferred that the returns are to that extent on the average fictitious.

Civil Surgeons and Deputy Sanitary Commissioners are unanimous in attributing the opposition to vaccination to be concerned more with the age of the child than with the operation itself, and, in view of the strong popular prejudice which exists against the vaccination of infants at an early age, I consider that it is desirable that the Vaccination Act should be amended so as to raise the age for compulsory vaccination to one year instead of six months.

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 94,305.

During the first quinquennium the number of deaths were 33,783 and during the second 60,522. In each of the last five years the mortality was as follows:—9,742, 6,687, 6,205, 18,514 and 19,374.

The provincial ratios of the mortality from small-pox per thousand of population during the last five years have been .28, .19, .17, .53 and .56 respectively.

8. Prevention of Small-pox.—The constant and considerable mortality noted in the preceding paragraph is, in my opinion, a complete demonstration both of the insufficiency and of the inefficiency of the existing arrangements for vaccination.

It is well known—in fact it is an admitted axiom—that thorough vaccination can and does stamp out small-pox altogether, and in the light of that knowledge, and in face of the above facts, there is great necessity for a more definite vaccination policy.

I do not consider that small-pox can be effectively dealt with and stamped out unless vaccination is made compulsory throughout the Province, and I would recommend that the Vaccination Act should be modified so as to extend the age within which vaccination is required, to one year, and should be generally enforced; that vaccination should be free; and that the supervision and control of vaccination should be delegated to District Boards and Municipalities and their Health Officers.

9. Inspection of Work.—During the year under report the Deputy Sanitary Commissioners inspected 145,627 primary vaccinations as against 24,905 in the previous year. The increase is considerable and satisfactory. The inspecting work done by the Deputy Sanitary Commissioners has been comprehensive and they have submitted valuable reports on the efficiency of the staff and the arrangements in 19 out of the 21 districts in the Province.

The Civil Surgeons of the Province inspected 53,177 primary and 9,047 revaccination operations against 50,044 primary and 9,065 revaccination last year. It should be noted that the methods of inspection of Civil Surgeons and Deputy Sanitary Commissioners are different. Civil Surgeons inspect the new work which has just been done and the numbers returned by them are therefore smaller, whereas Deputy Sanitary Commissioners inspect all the children under ten years of age, and look at old work as well as new work and also look for unvaccinated children and children who are marked with small-pox, and they also examine vaccinators' registers and other records in the villages where they can be verified and checked.

10. Officers of the Inspecting staff.—The officers of the inspecting staff have not yet attained to a very satisfactory standard of efficiency. A few of them are energetic and capable, and these men are being rapidly promoted and put in the most responsible positions. The majority, however, are careless and negligent and do not attempt to carry out their duties honestly and efficiently. The supervision and control of a large staff which is distributed throughout the Province is a matter of considerable difficulty for a central

office with only three Deputy Sanitary Commissioners to carry on the work, and it is only possible to attain a moderate degree of efficiency by strict enforcement of the departmental rules and regulations and standing orders.

11. Supply of Vaccine.—The Vaccine Dépôt at Namkum supplied the Province with vaccine throughout the year. A large supply of vaccine is held in reserve and the necessary stores and supplies for manufacture are in ample stock. 1,869,908 doses of vaccine were manufactured during the year as compared with 3,504,589 doses last year. The number of doses issued was 2,628,548 against 2,599,744 in 1919-20. The number of doses in stock at the end of the year was 1,493,759. The number of calves used during the year was 362 as compared with 602 in the previous year, and the average yield of crude vaccine was over 55 grammes per calf as compared with 48.6 grammes in the previous year. The number of calves required has been considerably reduced by improvement in the technique of operating and by the better feeding of calves, and the working costs are therefore low and compare most favourably with the costs of production in other provinces. The working costs of the dépôt for the year amounted to Rs. 24,923 as compared with Rs. 25,048 in the previous year. The average cost of the vaccine per dose works out at 2.5 pies on the gross expenditure and to .5 pie on the net expenditure when the receipts are taken into account.

12. Vaccine Depot and Cold Storage.—The Vaccine Dépôt was closed for manufacture twice during the working season in November and January on account of outbreaks of rinderpest. There were 65 attacks and 12 deaths during the two epidemics. The work of manufacture was seriously interfered with during the working season and considerable loss was incurred on account of the interruption of work, the deaths of calves, and the loss of vaccine.

During the year under report cholera vaccine and influenza vaccine were stored in the dépôt and issued throughout the Province as required.

A class for the training of candidates for the vaccination inspecting cadre was held in February and March and seven candidates were trained and qualified.

The cold storage plant, which is essential for the preservation of the vaccine, gave trouble throughout the year and was with difficulty kept going until the end of the working season. The plant has now been dismantled and is under repair, and the reserve stock of vaccine is in cold storage in Calcutta.

13. Experimental work.—Further experimental work was carried out at the dépôt during the year with some interesting results. With a view to producing a cleaner and purer vaccine, disinfectants were experimented with and it was found that the addition of 2 per cent. boric acid improved the quality of the vaccine by diminishing the number of other organisms present without decreasing its potency. After being kept in cold storage for six months the boric vaccine gave cleaner and better vaccination marks than the ordinary vaccine.

Experiments were also made with a view to producing a less fluid vaccine as there is a considerable wastage at present owing to the careless handling of the tubes by the vaccinators. It was found that a mixture of 5 per cent. starch and 2 per cent. boric acid with 93 per cent. water after boiling can be used to dilute and thicken the crude glycerinated vaccine with good results and without impairing its potency.

Further experiments are being made with this mixture before it is adopted for general issue, and if the results are satisfactory, a thicker and purer vaccine will be issued next season.

14. Cost of the Department.—The total cost of the Vaccine Department (excluding the Vaccine Dépôt) during the year, as detailed in Statement II, was Rs. 1,56,912 or Rs. 41,180 more than the previous year. The increase in cost was due to the increased rate of pay sanctioned by Government to the inspecting staff.

The cost per successful operation was 2 anna 5 pies against 1 anna 10 pies in the previous year. The increase in rate is due to the increased rate of pay.

15. **General.**—Owing to the lateness of the Puja holidays the work of vaccinators did not begin until November and it was considerably interfered with throughout the season by the increasing hostility of the people in various parts of the Province and by the discontent of the vaccinators caused by increasing difficulties in realization of fees. The latter difficulty was to some extent overcome by the sanction of a bonus of Rs. 20 to each vaccinator who worked satisfactorily during the season.

The results of the year's working in face of these difficulties are on the whole satisfactory. It is, however, a matter for serious consideration as to how long the existing arrangements can continue to work satisfactorily. The vaccinators are underpaid and discontented and find difficulty in many districts in realizing their fees. An increase in the rate of fee is necessary if the work is to continue under the present system, but I do not consider that this course will solve the ultimate problem, and I recommend a change of policy from the licensing system to a system of free vaccination under the supervision and control of the District Boards.

In conclusion, I desire to bring to the notice of Government the large amount of useful work done by the three Deputy Sanitary Commissioners during the year in inspecting work and reporting on the efficiency of the staff and work in almost all the districts of the Province. Dr. C. N. Banerjee has also carried out his duties as Superintendent of the Vaccine Depôt in a capable and satisfactory manner.

W. C. ROSS, MAJOR, I.M.S.,

Sanitary Commissioner.

STATEMENT I.									
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951	952	953	954	955	956	957	958	959	960
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991	992	993	994	995	996	997	998	999	1000

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	
Patna Division.										
1	Patna	By paid Vaccinators	1,009,631	777	23	9,537	8,369	17,906	814	16,394
		By licensed Vaccinators			60	28,223	26,591	54,814	913	54,682
2	Gaya	By paid Vaccinators	2,161,010	458	14	4,454	4,032	8,486	607	8,067
		By licensed Vaccinators			81	26,666	24,844	51,430	635	51,341
3	Shahabad	By paid Vaccinators	1,865,800	426	7	1,934	1,623	3,557	508	3,396
		By licensed Vaccinators			90	32,175	26,459	58,634	592	58,633
Total of Patna Division		By paid Vaccinators	5,636,301	566	43	15,935	14,024	29,959	608	27,753
		By licensed Vaccinators			260	84,964	77,914	164,578	687	164,646
Tirhut Division.										
4	Saran	By paid Vaccinators	2,289,778	853	8	2,306	1,807	3,912	489	2,860
		By licensed Vaccinators			87	31,064	31,695	65,519	754	65,442
5	Champaran	By paid Vaccinators	1,008,385	540	4	3,748	2,679	6,425	1,606	4,104
		By licensed Vaccinators			68	27,331	24,675	51,806	785	51,076
6	Muzaffarpur	By paid Vaccinators	2,845,514	637	12	3,918	2,424	6,342	528	3,233
		By licensed Vaccinators			75	43,418	40,857	84,275	1,102	84,255
7	Darbhanga	By paid Vaccinators	2,920,682	875	7	1,760	1,141	2,901	414	2,020
		By licensed Vaccinators			88	46,766	41,168	90,954	1,033	90,500
Total of Tirhut Division		By paid Vaccinators	9,973,259	701	31	11,729	7,861	19,180	631	12,237
		By licensed Vaccinators			316	151,469	141,215	292,684	926	291,273
Bhagalpur Division.										
8	Monghyr	By paid Vaccinators	2,131,361	548	7	1,332	1,163	2,435	369	2,421
		By licensed Vaccinators			30	26,957	26,768	53,715	1,757	52,629
9	Bhagalpur	By paid Vaccinators	2,139,318	606	11	1,786	1,599	3,395	281	2,519
		By licensed Vaccinators			63	27,357	26,872	54,029	857	53,802
10	Purnea	By paid Vaccinators	1,060,637	308	12	8,249	3,854	12,103	1,008	1,883
		By licensed Vaccinators			52	24,834	22,032	46,866	901	44,479
11	Santal Parganas	By paid Vaccinators	1,882,791	344	8	2,709	2,009	4,719	591	2,692
		By licensed Vaccinators			61	23,970	21,182	44,552	730	38,232
Total of Bhagalpur Division		By paid Vaccinators	8,142,117	437	38	14,076	8,346	22,422	500	9,515
		By licensed Vaccinators			206	107,538	95,644	198,182	902	180,142
Orissa Division.										
12	Cuttack	By paid Vaccinators	2,109,139	577	11	4,778	3,519	8,307	746	3,509
		By licensed Vaccinators			64	29,422	25,699	54,921	844	54,150
13	Balasore	By paid Vaccinators	1,055,558	506	5	5,127	2,466	7,593	1,516	1,885
		By licensed Vaccinators			32	11,843	10,431	22,279	696	10,266
14	Angul	By licensed Vaccinators	109,405	118	12	2,253	2,164	4,407	367	4,116
15	Puri	By paid Vaccinators	1,023,402	409	29	23,005	20,124	43,189	1,489	39,344
16	Sambalpur	By paid Vaccinators	744,193	194	6	571	461	1,032	172	721
		By licensed Vaccinators			42	8,091	8,809	17,600	423	17,790
Total of Orissa Division		By paid Vaccinators	5,131,707	373	51	33,441	26,570	60,011	820	44,060
		By licensed Vaccinators			160	82,614	46,903	99,467	662	86,372

Districts of Bihar and Orissa during the year 1920-21.

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.	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.												
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
7,950	7,400	15,997	320	1,612	802	316	97.63	65.32	44.50	1.96	13.39	63,359	42.48	666	.42
21,650	31,907	54,122	176	132	94	...	99.29	71.21		.32	...				
3,495	4,474	7,927	120	429	341	24	99.74	84.19	28.19	1.48	5.59	63,317	29.29	901	.41
13,859	30,232	50,073	127	89	83	2	99.53	95.40		.24	2.24				
2,322	988	3,300	4	165	56	5	99.17	35.00	33.45	12	3.03	50,414	27.02	499	.21
22,299	29,291	58,428	12	11	3	...	99.68	27.27		.02	...				
13,367	12,812	26,984	444	2,306	1,286	245	98.44	65.74	34.54	1.59	11.10	182,120	32.31	1,994	.35
57,908	97,430	163,623	315	232	180	2	99.50	78.25		.19	.66				
1,379	1,272	2,727	52	1,032	347	239	99.43	43.75	29.09	1.80	23.15	73,110	31.95	354	.16
19,933	41,803	64,420	436	207	79	8	99.09	32.69		.66	3.96				
1,965	1,938	4,099	31	2,321	1,134	280	98.42	55.56	29.82	.75	12.99	54,550	28.58	238	.12
21,325	29,100	50,995	22	730	339	79	99.88	47.46		.04	10.62				
1,660	1,524	3,121	3	3,109	1,951	101	99.62	64.86	31.35	.09	3.24	90,414	31.84	383	.13
21,123	64,515	83,786	10	20	7	...	99.45	35.00		.10	...				
545	1,492	2,008	...	881	261	264	99.40	42.30	31.99	...	19.95	97,067	31.38	597	.19
16,386	74,777	90,302	8	454	296	...	99.79	61.19		.06	...				
5,442	6,198	11,693	80	7,343	3,693	894	99.09	57.19	38.84	.79	12.03	310,231	31.10	1,542	.16
78,577	207,195	289,693	478	1,411	691	87	99.55	52.19		.16	6.16				
1,104	1,289	2,399	5	74	23	3	99.29	32.39	25.83	.20	4.05	67,996	31.90	425	.19
13,902	38,708	52,627	2	86	55	16	100	77.43		.000	17.44				
1,174	1,215	2,417	68	576	303	24	98.61	54.89	27.19	2.46	4.15	65,774	30.41	496	.22
26,957	27,609	53,771	10	227	123	73	99.93	59.80		.01	10.13				
933	856	1,851	18	10,230	4,679	803	99.24	69.00	26.10	.95	8.41	51,654	26.96	1,197	.57
21,955	21,889	44,108	61	2,407	1,202	106	99.30	58.14		.13	4.40				
1,360	1,238	2,658	9	2,037	1,707	234	99.06	74.55	24.35	.13	13.94	59,492	26.61	495	.26
19,783	17,767	37,709	189	6,329	3,923	619	99.27	68.90		.49	9.79				
4,871	4,617	9,725	100	12,997	6,312	1,174	99.04	55.61	25.92	1.45	9.09	225,210	28.88	2,653	.51
81,597	106,005	188,278	262	9,040	5,397	763	99.08	65.29		.13	6.44				
1,401	1,642	3,304	162	4,698	2,244	1,032	98.71	62.06	28.51	4.01	32.03	66,424	31.51	1,594	.75
24,165	27,500	53,744	272	771	502	82	99.75	61.56		.50	10.43				
295	924	1,358	10	6,198	4,297	436	98.76	74.40	26.13	.72	7.08	25,933	24.56	453	.42
3,632	14,131	19,139	60	3,013	2,287	309	99.65	67.49		.31	13.24				
1,423	2,450	3,867	58	291	173	30	99.78	69.28	20.26	1.40	10.30	7,671	36.36	54	.27
12,649	20,995	38,303	777	3,845	2,576	709	99.47	62.14		1.97	18.13				
148	138	704	16	311	107	71	99.01	82.08	24.69	1.28	22.82	19,017	26.45	427	.52
13,167	3,970	17,145	319	70	69	...	99.12	38.57		1.79	...				
14,903	23,699	43,729	959	15,032	9,304	2,298	99.36	72.94	29.65	2.13	15.10	152,584	29.75	3,548	.60
42,587	48,051	93,915	709	4,145	3,091	511	99.26	85.06		.74	12.32				

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.	Primary Total.	
					Male.	Female.	Total.			
1	2	3	4	5	6			7	8	
Chota Nagpur Division.										
17	Hazaribagh ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	1,288,009	183	{ 7 45 }	2,478 18,293	1,629 11,562	4,107 24,545	588 552	1,635 23,428
18	Ranchi ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	1,387,073	195	{ 3 40 }	948 21,016	663 17,638	1,009 37,654	536 768	1,199 35,088
19	Palamu ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	687,710	159	{ 8 25 }	3,531 9,051	1,662 7,214	5,193 16,265	640 652	737 15,526
20	Mamhram ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	1,547,576	373	{ 35 36 }	9,909 14,357	8,112 12,115	17,921 27,542	512 795	13,149 26,309
21	Singbhum ...	{ By paid Vaccinators ... By licensed Vaccinators ... }	694,394	178	{ 4 21 }	404 9,776	888 6,515	1,292 16,291	213 871	761 24,105
Total of Chota Nagpur Division.		{ By paid Vaccinators ... By licensed Vaccinators ... }	5,006,362	206	{ 67 176 }	17,317 66,493	12,454 58,134	29,771 124,627	520 708	17,531 119,956
Total of Vaccine Department.		{ By paid Vaccinators ... By licensed Vaccinators ... Total ... }	34,469,840	414	{ 220 1,968 1,308 }	92,398 459,978 552,376	69,245 419,860 489,105	161,643 879,838 1,041,481	734 808 792	111,995 854,339 966,334
Total Dispensary Department		...	...	...	1	201	171	372	372	262
Total Railways		...	...	...	1	607	807	914	914	713
Total Cooly Department		...	...	...	3	2,245	1,368	3,613	1,204	467
Total Jails and Cantonments		...	...	...	2	13,387	718	14,105	(a) 381	1,927
Grand Total		...	...	...	1,315	368,816	291,609	1,060,425	800	969,723

(a) Cantonments only.

District of Bihar and Orissa during the year 1920-21—concl'd.

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.	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.												
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
596	983	1,609	14	2,417	1,584	438	99.58	79.95	22.60	83	18.03	30,855	30.92	274	.21
12,144	9,945	22,427	...	2,417	2,214	102	99.99	95.63		...	4.22				
1,062	110	1,180	...	410	255	37	98.41	68.36	27.72	...	9.02	43,600	31.47	324	.23
27,432	7,414	35,066	1	2,566	1,744	199	99.90	73.87		992	7.75				
246	318	658	34	4,455	2,541	1,094	93.59	70.53	28.13	6.61	24.55	25,188	36.62	236	.34
10,359	4,083	16,374	116	769	539	86	99.76	78.91		74	11.18				
5,395	7,045	12,709	279	4,766	2,484	678	98.74	60.76	27.90	2.12	14.22	50,288	32.49	428	.27
12,985	12,959	26,795	...	783	713	3	99.94	97.67		...	40				
612	314	731	11	91	17	9	97.46	20.73	25.35	1.41	9.99	17,993	26.91	200	.37
8,591	5,351	14,000	6	4,186	3,210	305	99.65	84.00		04	8.71				
7,711	8,769	16,947	338	12,140	6,881	2,254	98.56	34.58	29.42	1.92	18.56	176,984	31.57	1,522	.27
71,611	39,762	113,732	123	10,671	8,420	755	99.03	84.92		10	7.07				
46,001	56,093	106,789	1,927	40,618	27,479	6,855	98.82	64.07	29.39	1.72	13.78	1,057,235	39.65	11,159	.32
331,880	488,433	848,048	1,885	25,499	17,779	2,118	99.47	76.04		22	8.30				
377,981	554,525	957,728	3,812	75,147	45,258	8,073	99.39	68.30	...	39	11.94	...	...	...	...
138	124	262	...	110	84	4	100	79.24	...	...	3.03	...	...	...	...
676	...	676	...	201	166	...	94.81	82.58	...	...	...	...	...	...	...
8	6	24	462	3,126	8	3,118	96.00	100	...	94.86	90.74	...	...	...	...
239	113	1,831	41	12,178	7,659	1,049	92.86	69.17	...	5.04	9.20	...	...	...	...
379,042	554,769	960,521	4,315	90,762	53,175	13,144	99.49	68.50	...	44	14.48	...	...	...	...

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.													
Statement (I) ...	900,334	75,147	900,334	75,147	99.30	68.30	1,308	706	377,931	554,526			
BY DISPENSARY STAFF.													
Statement III ...	262	110	262	110	100.00	79.24	(a) 1	372	138	124	29.39	1,56,912 5 8	0 2 5
BY OTHER AGENCIES.													
Railways, Cooly Depot, Jails and Cantonments.	3,127	15,505	3,127	15,505	80.94	59.51	(b) 6	681	923	119			
Total ...	900,723	90,762	900,723	90,762	99.40	68.50	1,315	806	379,042	554,709	29.39	1,56,912 5 8	0 2 5

(a) Darbhanga only.

(b) Cooly Department, Jails and Cantonments only.

STATEMENT II.

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

Expen

No.	Circle and district.	European supervising officer.	Expen									
			Pay.	Native supervising officer.	Pay.	Paid vaccinators.	Pay.	Licensed vaccinators.	Pay.	Clerks.	Pay.	Peons, etc.
1	2	3	4	5	6	7	8	9	10	11	12	13
					Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.	Rs. a. p.
PATNA DIVISION.												
1	Patna ... ..	...	...	6	2,858 0 0	23	2,196 2 0	00	1,912 12 0	...	...	1 36 0 0
2	Gaya ... ..	...	...	5	3,318 7 6	14	1,463 0 0	81	...	...	...	2 192 0 0
3	Shahabad ... ..	...	...	5	2,564 7 5	7	640 0 0	99	506 6 0	...	...	...
	Total of Patna Division	...	...	16	8,740 14 11	44	4,299 11 0	249	2,419 2 0	...	...	3 228 0 0
TIRHUT DIVISION.												
4	Saran ... ..	...	...	4	2,020 0 0	8	604 0 0	87	1,725 0 0	...	...	...
5	Champaran ... ..	...	...	3	1,520 0 0	4	454 8 0	66	1,435 12 0	...	...	...
6	Monaharpur ... ..	...	...	4	2,758 0 0	12	1,570 10 8	75	1,490 0 0	...	...	...
7	Darbhanga ... ..	...	...	4	2,170 0 0	8	600 0 0	88	1,595 6 0	1	60 0 0	1 24 0 0
	Total of Tirhut Division	...	...	15	6,068 0 0	32	3,319 2 8	316	6,247 2 0	...	60 0 0	1 24 0 0
BHAGALPUR DIVISION.												
8	Meerghur ... ..	...	...	4	2,100 0 0	7	1,072 15 2	30	1,140 0 0	...	...	2 108 0 0
9	Bhagalpur ... ..	...	...	5	3,355 9 2	11	1,085 8 9	63	...	...	...	...
10	Purnea ... ..	...	...	4	2,004 12 0	12	1,424 15 0	52	876 4 0	...	...	...
11	Santal Parganas ... ..	...	...	7	3,498 7 9	8	1,071 12 6	61	97 0 0	...	...	...
	Total of Bhagalpur Division	...	...	20	10,978 12 11	38	4,655 3 5	206	2,113 4 0	...	...	2 108 0 0
ORISSA DIVISION.												
12	Cuttack ... ..	...	...	4	1,881 8 0	11	1,470 11 4	64	1,000 0 0	...	...	...
13	Balasore ... ..	...	...	3	2,131 7 0	6	690 14 8	32	500 0 0	...	...	...
14	Angul ... ..	...	...	3	2,312 1 9	...	304 0 0	12	220 0 0	...	...	...
15	Puri ... ..	...	...	3	1,740 0 0	29	3,771 14 4	...	...	...	...	...
16	Sambalpur ... ..	...	...	3	1,562 6 7	6	708 10 2	42	...	...	...	2 40 0 0
	Total of Orissa Division	...	...	16	9,627 7 4	62	7,005 2 6	150	1,870 0 0	...	...	2 140 0 0
CHOTA NAGPUR DIVISION.												
17	Hazaribagh ... ..	...	...	4	1,920 0 0	9	514 8 4	45	...	...	...	...
18	Ranchi ... ..	...	...	5	3,200 14 2	4	765 13 1	49	...	...	...	...
19	Palamanu ... ..	...	...	3	1,080 13 4	9	1,044 1 7	25	...	...	...	...
20	Manbhum ... ..	...	...	5	2,318 15 11	35	5,754 5 10	36	...	...	...	...
21	Singbhum ... ..	...	...	3	1,408 12 0	4	270 0 0	21	57 14 0	...	...	...
	Total of Chota Nagpur Division	...	...	20	10,659 7 5	61	8,318 12 10	176	57 14 0	...	...	...
	Total of Vaccine Circle	...	...	57	49,074 10 7	227	27,629 0 5	1,088	12,776 0 0	1	60 0 0	8 400 0 0
	ESTABLISHMENT OF THE DEPUTY SANITARY COMMISSIONER, NORTH Bihar Circle.	...	...	1	8,343 11 11	...	...	...	...	2	1,210 1 6	2 265 8 0
	Ditto SOUTH BIHAR CIRCLE	...	...	1	10,006 15 5	...	...	...	...	2	1,258 13 7	2 255 14 5
	Ditto CHOTA NAGPUR AND ORISSA CIRCLE.	...	...	1	6,674 6 8	...	...	...	...	2	1,220 15 6	2 271 1 7
	Total	...	...	3	25,025 2 0	...	...	...	...	6	3,689 14 7	6 792 8 0
	Total of Province	...	...	90	77,159 12 7	227	27,629 0 5	1,088	12,707 6 0	7	3,749 14 7	14 1,192 8 0

Province of Bihar and Orissa during the year 1920-21.

Expenditure.												Paid from	
Total pay of establishment.	Travelling allowance.	Contingencies.		Total cost.	Imperial Fund.	Provincial Fund.	Local Fund.	Municipalities.	Native States.	Total.	Number of all successful vaccinations and re-vaccinations.	Average cost of each successful case.	
		Cost of lymph.	Other essential expenses.										
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.	
7,002 14 0	548 5 6	...	235 9 6	7,783 613 0	...	5,536 3 5	1,033 0 0	1,177 9 6	...	7,783 13 0	71,240	0 1 9	
4,974 0 6	675 13 3	...	319 5 9	5,969 3 6	...	4,114 4 9	1,118 12 6	736 2 3	...	5,969 3 6	10,998	0 1 7	
3,710 13 5	1,593 13 11	...	121 5 0	5,342 0 4	...	4,557 4 5	...	774 11 11	...	5,342 0 4	52,415	0 1 4	
15,087 11 11	2,731 0 8	...	679 4 3	18,508 0 10	...	14,217 12 8	2,171 12 6	2,709 7 8	...	18,508 0 10	194,695	0 1 6	
4,940 0 0	503 12 0	...	404 0 0	5,853 12 0	...	4,765 12 0	180 0 0	908 0 0	...	5,853 12 0	69,000	0 1 4	
3,440 4 0	1,163 0 0	...	113 6 0	4,656 10 0	...	4,108 12 0	154 0 0	353 14 0	...	4,656 10 0	56,914	0 1 3	
5,818 10 8	556 0 0	...	225 12 6	6,600 7 2	...	4,930 0 0	684 10 8	1,015 12 6	...	6,600 7 2	89,230	0 1 2	
4,510 6 0	1,316 14 0	66 0 0	169 0 0	6,043 4 0	...	5,173 4 0	69 0 0	810 0 0	...	6,043 4 0	98,608	0 1 4	
18,718 4 8	3,476 10 0	68 0 0	803 2 6	23,164 1 2	...	18,973 12 0	1,078 10 8	3,097 10 6	...	23,164 1 2	307,615	0 1 2	
4,410 15 2	1,710 12 0	...	261 0 0	6,382 11 2	...	5,050 12 0	138 5 11	823 9 3	...	6,382 11 2	55,104	0 1 10	
4,441 1 11	623 2 6	...	1,783 0 6	6,356 4 11	...	5,157 2 8	519 14 3	6 0 4 0	...	6,356 4 11	58,176	0 1 9	
4,335 15 0	1,346 10 8	...	230 14 6	5,915 8 2	...	4,316 8 3	608 6 5	916 9 6	...	5,915 8 2	51,030	0 1 9	
4,657 4 3	2,337 8 10	...	148 8 0	7,143 5 1	...	6,038 0 7	403 14 0	608 6 6	...	7,143 5 1	45,804	0 2 6	
17,855 4 4	6,028 2 0	...	1,922 7 0	25,805 13 4	...	19,554 7 6	2,233 8 7	3,017 13 3	...	25,805 13 4	311,074	0 1 11	
4,442 3 4	722 7 11	...	205 2 0	5,369 13 3	...	3,923 15 0	807 11 10	678 2 6	...	5,369 13 3	60,775	0 1 4	
3,382 5 8	3 9 7 0	...	60 0 0	3,791 12 3	...	3,103 14 0	423 14 6	267 0 0	...	3,791 12 3	27,597	0 2 2	
2,836 1 9	695 7 0	...	40 0 0	3,571 8 9	...	3,171 8 9	...	...	...	3,571 8 9	4,060	0 1 4
5,511 14 4	1,444 14 0	...	93 0 0	7,046 12 4	...	3,274 14 0	3,638 14 4	183 0 0	...	7,046 12 4	41,225	0 2 9	
2,371 0 9	420 5 5	...	92 7 0	2,892 13 2	...	2,635 8 0	559 10 2	297 11 0	...	2,892 13 2	15,623	0 2 5	
18,543 9 10	3,641 9 4	...	487 9 0	21,672 12 2	...	15,903 11 9	5,149 8 0	1,620 13 5	...	21,672 12 2	182,180	0 2 4	
2,434 8 4	1,378 3 0	...	169 14 11	3,922 10 3	...	3,308 1 11	260 3 5	354 4 11	...	3,922 10 3	29,123	0 2 1	
4,026 11 3	473 13 0	...	89 15 9	4,590 8 0	...	3,824 10 11	...	765 13 1	...	4,590 8 0	38,450	0 1 11	
2,734 14 11	8 3 14 11	...	15 0 0	3,613 13 10	...	2,969 12 3	769 13 3	331 7 4	...	3,613 13 10	19,346	0 2 11	
8,073 8 9	1,040 12 9	...	70 0 0	9,184 2 6	...	3,179 12 8	5,512 12 11	341 6 11	...	9,184 2 6	43,192	0 3 4	
1,796 10 0	589 13 4	...	81 7 0	2,767 14 4	...	2,486 7 4	45 0 0	236 7 0	...	2,767 14 4	18,023	0 2 5	
19,066 2 3	4,585 9 0	...	426 5 5	24,079 0 11	...	15,718 13 1	6,427 10 7	1,932 9 3	...	24,079 0 11	118,134	0 2 7	
93,871 1 0	20,463 15 0	64 0 0	4,408 12 5	114,909 11 5	...	85,285 9 0	17,361 13 4	12,172 6 1	...	114,909 12 5	1,013,696	0 1 9	
9,819 5 5	2,127 12 6	...	609 0 3	12,656 2 2	...	12,656 2 2	...	...	...	12,656 2 2	...	...
11,531 11 5	2,631 9 9	...	933 14 9	15,147 3 11	...	15,147 3 11	...	...	...	15,147 3 11	...	...
11,166 7 9	2,708 12 5	...	413 15 0	14,299 3 2	...	14,299 3 2	...	...	...	14,299 3 2	...	...
32,567 8 7	7,568 2 8	...	1,995 14 0	42,102 9 3	...	42,102 9 3	...	...	...	42,102 9 3	...	...
1,23,438 9 7	28,032 1 8	69 0 0	6,375 10 6	1,60,912 5 8	...	1,27,288 2 3	17,331 13 4	12,172 6 1	...	1,60,912 5 8	10,13,696	0 2 5	

B.—DISPENSARY VACCINATION.

STATEMENT No III.—Showing Dispensary Vaccination in the Province of Bihar and Orissa during the year 1920-21.

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.	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
Pates
Gaya
Shahabad
Saran
Champan
Muzaffarpur
Darbhanga	...	1	1	373	373	262	138	124	263	...	110	84	4	100.00	79.24	3.63
Monghyr
Bhagalpur
Purnea
Santal Parganas
Cuttack
Balasore
Angul
Peri
Sambalpur
Hazaribagh
Ranchi
Palaman
Manbhum
Singbhum
Total	...	1	1	373	373	262	138	124	263	...	110	84	4	100.00	79.24	3.63

COMPARATIVE STATEMENT No. IV.

COMPARATIVE STATEMENT No. IV.—Showing the number of persons primarily vaccinated, and the number of those per

Establishment.	Persons primarily								
	1911-12		1912-13		1913-14		1914-15		
	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	649	515	
Municipal	46,769	44,879	43,379	42,311	44,167	42,480	47,135	45,310
Local Fund	96,381	95,057	86,551	85,265	82,592	81,790	76,264	75,261
Dispensaries	384	303	188	185	186	186	178	176
Licensed Vaccinators	1,135,713	1,128,318	1,133,310	1,126,927	1,149,467	1,143,922	1,114,753	1,109,554
Total	1,279,247	1,268,497	1,263,428	1,255,388	1,276,412	1,268,368	1,239,079	1,230,821

COMPARATIVE STATEMENT No. IV

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

vaccinated.

1915-16		1916-17		1917-18		1918-19		1919-20		1920-21	
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
10,277	10,046	3,963	3,441	6,984	6,060	6,637	5,941	7,363	6,520	1,927	1,831
43,099	41,661	38,645	37,226	37,586	36,107	36,573	35,213	36,810	35,428	32,858	31,541
94,056	84,636	80,353	73,103	82,772	77,911	59,639	56,495	69,847	66,946	80,337	77,939
285	216	202	202	181	177	129	139	178	178	262	262
1,065,023	1,059,266	922,991	913,264	81,549	926,281	816,096	811,506	811,168	806,217	854,339	848,948
1,212,740	1,195,824	1,046,154	1,027,236	1,059,072	1,046,526	919,084	900,294	925,366	915,289	969,723	960,521

STATEMENT No. V.—Showing particulars of vaccination

District.	Total number of persons vaccinated.		Total number inspected—								Percentage 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
Fatna ...	71,349	2,435	15,447	...	561	495	12,618	...	24,697	...	21.05	...
Gaya ...	60,523	1,297	15,447	...	1,429	...	14,415	39	20,442	8	25.52	...
Shahabad ...	62,104	794	10,842	...	1,888	39	16,410	9	18,225	5	17.46	...
Saran ...	68,468	1,578	8,418	...	2,987	...	18,263	...	26,534	...	12.29	...
Champanan ...	55,291	3,604	8,025	...	10,449	643	9,991	141	13,326	207	14.57	...
Munaffarpur ...	87,507	3,747	10,177	...	12,019	435	14,536	...	27,181	168	11.62	...
Darbhanga ...	92,700	1,806	...	...	4,519	401	19,593	204	29,219	...	...	...
Monghyr ...	55,950	100	8,948	...	2,231	...	6,330	...	12,278	20	16.25	...
Bhagalpur ...	56,321	3,344	15,451	...	1,328	2,541	19,427	22	37,672	35	27.43	...
Purnea ...	46,302	12,627	9,241	...	1,721	12	4,255	603	11,139	569	19.83	...
Santal Pargamas ...	49,924	8,735	15,982	...	2,374	421	5,134	643	10,568	1,009	39.04	...
Cuttack ...	57,670	6,828	2,813	...	363	181	6,083	...	9,550	...	4.87	...
Balasore ...	20,818	10,370	1,268	...	169	831	4,912	223	6,796	937	6.07	...
Angul ...	4,116	291	...	...	608	...	1,379	...	1,752	15	...	...
Puri ...	29,392	4,183	1,625	...	435	328	10,279	280	20,809	675	4.12	...
Sambalpur ...	18,513	1,036	692	...	583	435	4,333	...	5,463	...	3.73	...
Hazaribagh ...	24,871	6,788	8,652	...	1,325	11	3,907	87	6,792	603	32.37	...
Ranchi ...	36,319	3,141	3,907	...	767	...	9,515	4.5	16,472	315	19.73	...
Palamanu ...	16,332	7,138	4,970	...	2,076	154	3,905	57	4,969	22	30.06	...
Manbhum ...	39,465	6,564	2,211	...	1,707	899	3,042	246	5,598	...	5.54	...
Singhbhum ...	14,875	4,296	2,110	...	2,314	211	7,707	337	6,283	696	14.18	...
TOTAL ...	669,723	90,762	145,627	...	53,177	9,047	195,297	3,307	321,685	6,181	16.03	...

verified by Inspecting Officers during the year 1920-21.

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		
79	19.92	17.72	...	34.60	...	99.97	...	92.41	37.17	97.85	...	98.05	...	99.43	53.15		
2.36	...	23.82	2.31	33.77	.62	94.91	...	99.58	...	97.08	89.33	98.11	62.50	99.16	71.16		
3.04	3.78	28.42	1.13	29.35	.63	85.30	...	93.07	63.66	90.04	69.06	97.30	100.	97.00	71.16		
5.82	...	27.80	...	38.78	...	18.55	...	97.21	...	97.03	...	97.35	...	98.37	49.72		
18.91	17.40	19.45	3.81	24.14	5.60	90.48	...	98.77	65.00	90.20	6.28	97.47	43.37	99.71	50.37		
13.73	12.29	19.61	...	31.06	4.72	95.47	...	100.	100.	90.18	...	97.74	30.90	99.33	67.93		
4.87	21.48	26.03	10.93	31.47	...	...	...	99.80	49.88	90.42	45.58	90.16	...	99.77	50.27
4.05	...	11.00	...	22.30	16.25	77.42	...	100.	...	99.73	...	19.85	73.07	99.95	45.20		
2.35	26.28	34.49	.65	67.24	1.04	90.31	...	99.32	61.51	99.18	50.	99.64	51.42	99.76	59.45		
3.71	70	9.18	4.76	24.02	4.43	70.16	...	99.01	59.	99.05	65.17	97.65	64.10	99.22	47.27		
5.80	4.81	12.54	7.37	40.48	21.85	81.04	...	97.77	64.37	98.34	70.58	97.32	81.50	98.78	62.24		
7.2	14.36	10.54	...	16.55	...	77.49	...	99.34	88.58	99.00	...	99.29	...	99.69	67.79		
8.1	8.09	23.78	2.42	32.90	10.17	59.29	...	98.81	77.59	99.45	58.05	10.55	89.89	98.26	68.43		
22.78	...	31.29	...	42.98	5.15	...	...	98.18	...	92.96	...	92.40	65.00	94.43	59.45
1.10	8.08	26.12	0.69	52.83	16.13	86.45	...	96.55	79.58	98.16	74.28	97.88	74.22	97.50	68.01		
3.14	41.98	23.42	...	29.61	...	57.69	...	90.90	77.24	91.67	...	88.84	...	96.42	64.86		
5.32	15	13.29	1.28	27.30	8.88	87.03	...	99.17	9.09	93.26	97.70	96.62	74.43	90.77	65.38		
2.10	...	25.14	13.21	45.26	19.02	89.42	...	99.60	...	98.15	74.69	98.20	80.85	99.94	66.28		
12.55	4.95	23.90	.79	28.24	.30	67.54	...	88.00	69.45	96.79	17.54	92.09	45.45	99.55	74.60		
5.04	14.86	11.05	4.23	16.55	...	83.33	...	98.71	54.61	96.37	79.68	97.35	...	99.85	53.63		
15.55	4.91	51.81	7.84	42.23	16.20	82.22	...	97.40	79.61	91.54	79.62	94.47	74.56	99.30	75.49		
5.85	9.96	21.51	3.64	35.42	6.81	89.62	...	98.31	67.04	97.08	63.66	67.04	75.11	95.94	61.70		

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

District.	1911-12		1913-14		1914-15					
	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	·09	48,687	·07	48,768	·17	48,480	·48	57,665
Gaya	·07	69,923	·008	66,935	·03	67,817	·10	65,855
Shahabad	·02	36,809	·006	47,086	·09	53,812	·32	62,079
Saran	·03	83,221	·006	85,339	·06	81,699	·06	80,739
Champaran	·03	60,354	·07	55,486	·02	63,100	·10	64,146
Muzaffarpur	·05	102,535	·04	101,405	·01	103,052	·09	105,292
Darbhanga	·06	83,343	·01	93,546	·06	93,735	·24	97,760
Monghyr	·09	89,123	·08	84,475	·48	89,024	·46	89,749
Bhagalpur	·43	80,294	·41	77,274	·31	75,344	·35	75,831
Purnea	·24	59,409	·14	56,916	·22	60,587	·30	58,496
Santal Parganas	·08	61,909	·19	60,236	·27	64,815	·18	53,182
Cuttack	·002	153,747	·01	137,175	·01	134,227	·06	113,297
Balasore	·19	63,287	·006	68,271	·11	69,059	·90	53,281
Angul	8,207	...	5,906	...	7,945	...	7,680
Puri	·006	53,619	·02	55,642	·07	47,269	·02	33,820
Sambalpur	33,153	·04	25,955	·05	25,063	·02	27,561
Hazaribagh	·006	46,544	·02	46,150	·02	51,777	·03	48,299
Ranchi	·02	48,913	·004	51,096	·01	49,989	·08	50,958
Palamau	·008	24,782	...	23,683	·07	21,459	·10	28,327
Manbhum	·0006	60,420	·005	61,191	·02	61,316	·43	73,369
Singhbhum	·004	22,841	·05	20,254	·09	23,496	·45	25,909
Total	·08	1,288,620	·06	1,270,859	·11	1,292,965	·22	1,273,285

small-pox and the number of successful vaccinations during the ten years ending 1920-21.

1915-16		1916-17		1917-18		1918-19		1919-20		1920-21	
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
·71	68,438	·28	67,870	·15	68,529	·13	68,535	·35	68,573	2·79	71,340
·68	75,641	·37	56,139	·18	62,246	·21	56,114	·62	66,449	·77	60,938
·45	65,016	·26	51,176	·10	51,858	·02	41,625	·24	42,394	·55	62,418
·15	79,608	·27	74,895	·16	77,721	·07	66,443	·10	66,882	·39	86,000
·14	68,255	·07	49,091	·11	51,755	·14	50,191	·13	53,458	·29	56,914
·24	104,624	·20	88,702	·09	85,898	·02	86,664	·10	87,182	·13	89,230
·41	95,237	·28	96,020	·07	93,206	·08	86,555	·10	88,770	·17	93,463
·42	87,999	·17	67,229	·10	68,361	·05	56,576	·24	59,814	·28	55,104
·38	74,532	·22	66,899	·22	68,166	·09	59,034	·23	66,741	·22	58,176
·38	51,206	·33	53,018	·64	49,490	·52	54,209	·96	50,349	·98	51,930
·37	57,558	·43	46,826	·14	56,728	·06	46,659	·30	44,691	·37	45,864
·69	89,925	·46	73,415	·81	62,177	·39	51,815	·91	55,008	·30	60,775
·90	38,609	·24	22,178	·03	25,800	·09	20,942	·86	22,139	·54	27,597
·01	9,686	·15	9,226	·01	6,956	·06	6,751	1·11	5,739	...	4,060
·30	37,595	·52	29,228	·26	34,639	·75	33,543	3·12	32,940	·77	41,235
·75	22,606	1·09	19,938	·24	23,345	·07	15,361	·68	13,835	·27	18,523
·49	46,709	·19	42,148	·07	39,731	·07	35,632	·24	35,026	·13	29,123
·12	52,111	·05	48,667	·03	47,094	·04	31,870	·90	40,559	1·38	38,450
·17	31,808	·15	25,542	·06	26,893	·06	20,472	1·26	21,226	1·76	19,346
·63	54,056	·23	49,379	·02	52,289	·05	37,807	·44	57,908	·11	43,192
·28	19,526	·12	17,429	·09	17,872	·10	15,542	1·24	19,595	·52	18,023
·42	1,230,745	·28	1,053,015	·19	1,070,784	·17	942,370	·53	989,278	·56	1,013,696

STATEMENT NO. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1920-21.

District.	Towns.	Number of births during the year ending 31st March 1921.	Number of deaths amongst infants under one year during the year ending 31st March 1921.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1921.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Patna	Patna	3,744	775	2,603	1st October 1884.
	Bihar	866	165	649	1st April 1887.
	Dinapur	1,202	177	850	28th January 1891.
	Barh	271	51	202	1st April 1887.
	Khagole	236	42	171	12th July 1910.
	Total	6,319	1,210	4,475	
Gaya	Gaya	1,899	704	828	1st January 1883.
	Tikari	155	20	77	3rd January 1891.
	Daudnagar	248	62	107	Ditto.
	Total	2,302	786	1,002	
Shahabad	Arrah	1,389	257	858	20th July 1885.
	Buxar	414	142	393	1st April 1887.
	Dumraon	566	98	212	Ditto.
	Jagadispur	279	43	259	20th December 1890.
	Sassaram	793	180	451	1st April 1887.
	Bhabhua	184	47	149	Ditto.
	Total	3,625	767	2,322	
	Total of Patna Division.	12,246	2,763	7,799	
Saran	Chapra	1,440	278	481	1st April 1887.
	Revelganj	335	62	50	12th December 1890.
	Siwan	457	58	217	1st April 1887.
	Total	2,232	398	748	
Champanan	Motihari	409	89	329	1st April 1887.
	Bettiah	925	112	390	Ditto.
	Total	1,334	201	719	

STATEMENT NO. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1920-21—contd.

District.	Towns.	Number of births during the year ending 31st March 1921.	Number of deaths amongst infants under one year during the year ending 31st March 1921.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1921.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Muzaffarpur	Muzaffarpur	1,155	278	784	1st January 1886.
	Sitamarhi	407	53	192	1st April 1887.
	Hajipur	772	164	189	1st May 1890.
	Lalganj	352	69	225	1st April 1887.
	Total	2,686	564	1,390	
Darbhanga	Darbhanga	1,990	351	429	24th May 1884.
	Roserha	600	73	45	3rd January 1891.
	Samastipur	276	39	51	25th July 1910.
	Madhubani	323	59	20	1st April 1887.
	Total	3,189	522	545	
	Total of Tirhut Division.	9,441	1,685	3,402	
Monghyr	Monghyr	1,706	247	140	15th November 1882.
	Jamalpur	1,025	197	464	Ditto.
	Total	2,731	444	60	
Bhagalpur	Bhagalpur	1,871	312	537	15th February 1884 withdrawn on 16th October 1895 ; re-extended on 18th August 1898.
	Colgong	149	39	56	Ditto, re-extended on 19th December 1901.
	Total	2,020	351	593	
Purnea	Purnea	427	48	185	1st July 1887.
	Kishanganj	164	24	130	12th November 1892.
	Katihar	237	20	276	8th August 1910.
	Forbesganj	177	11	95	9th August 1912.
	Total	1,005	103	686	

STATEMENT NO. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1920-21—contd.

District.	Towns.	Number of births during the year ending 31st March 1921.	Number of deaths amongst infants under one year during the year ending 31st March 1921.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1921.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Santal Parganas ...	Sahibganj ...	570	104	274	1st May 1884.
	Deoghar ...	216	48	95	Ditto.
	Madhupur ...	182	23	79	22nd August 1910.
	Dumka ...	186	46	99	Notifications, dated the 9th April 1884, and 23rd August 1910.
	Total ...	1,154	221	547	
	Total of Bhagalpur Division.	6,910	1,119	2,430	
Cuttack ...	Cuttack ...	1,080	182	401	1st September 1884.
	Kendrapara ...	477	103	115	7th February 1888.
	Jajpur ...	330	77	99	Ditto.
	Total ...	1,887	362	615	
Balasore ...	Balasore ...	197	94	69	7th February 1888.
Puri ...	Puri ...	593	283	228	Ditto.
Sambalpur ...	Sambalpur ...	385	97	140	7th March 1895.
	Total of Orissa Division.	3,062	833	1,052	
Hazaribagh ...	Hazaribagh ...	478	41	135	1st January 1885.
	Chatra ...	266	87	63	1st August 1885.
	Giridih ...	338	61	111	8th September 1910.
	Total ...	1,082	189	309	
Ranchi ...	Ranchi ...	1,080	132	935	1st April 1887.
	Lohardaga ...	151	17	127	25th June 1892.
	Total ...	1,231	149	1,062	

STATEMENT No. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1920-21—concl'd.

District.	Towns.	Number of births during the year ending 31st March 1921.	Number of deaths amongst infants under one year during the year ending 31st March 1921.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1921.	Date of extension of Vaccination Act to town.			
1	2	3	4	5	6			
Palamau	...	Daltonganj	...	225	44	106	9th October 1890.	
Manbhum	...	{	Purulia	...	374	60	524	1st January 1887.
			Raghunathpur	...	179	22	57	9th February 1894.
			Jhalda	...	156	16	41	9th July 1892.
			Dhanbad	...	237	30	113	5th December 1918.
			Total	...	946	128	735	
Singhbhum	...	{	Chaibassa	...	291	26	159	20th June 1892.
			Chakradharpur	...	194	14	12	13th January 1919.
			Total	...	485	40	171	
			Total of Chota Nagpur Division.		3,999	550	2,883	
			Total for the Province		35,658	6,953	17,066	

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	71,349	70,044	793	512	99.43	...	...
Gaya	60,523	60,015	361	147	99.16	...	...
Shahabad	62,104	61,853	230	21	99.59	...	...
Saran	63,448	67,267	687	494	98.27	...	...
Champaran	55,201	55,053	94	54	99.73	...	...
Muzaffarpur	87,507	86,925	369	13	99.33	...	...
Darbhanga	92,790	92,580	202	8	99.77	...	...
Monghyr	55,050	55,026	17	7	99.95	...	...
Bhagalpur	56,321	56,188	55	78	99.76	...	...
Parua	46,305	45,939	324	79	99.10	...	...
Santal Parganas	40,924	40,427	295	198	98.78	...	...
Cuttack	57,670	57,056	177	437	98.93	...	...
Balasore	20,858	20,497	84	277	98.26	...	...
Angul	4,116	3,887	71	156	94.43	...	...
Puri	39,362	38,380	905	777	97.50	...	...
Sambalpur	18,513	17,851	333	329	96.42	...	...
Hazaribagh	24,871	24,814	40	17	99.77	...	...
Ranchi	36,389	36,368	20	1	99.94	...	...
Palamau	16,532	16,045	82	403	97.05	...	...
Manbhum	39,958	39,504	175	279	98.86	...	...
Singbhum	14,875	14,782	69	24	99.37	...	...
TOTAL	909,723	900,521	4,887	4,315	99.05	...	...

II.

used and their rates of success during the year 1920-21.

Re-vaccination.																	
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
...	2,485	1,296	940	249	32.15	...	...	...	...	...
...	1,297	923	348	26	71.16	...	...	...	...	...
...	794	565	207	22	71.15	...	...	...	...	...
...	1,573	733	508	247	46.45	...	...	...	...	...
...	3,694	1,861	1,376	457	50.37	...	...	...	...	...
...	3,547	2,305	1,074	168	64.56	...	...	...	...	...
...	1,803	888	684	294	47.56	...	...	...	...	...
...	160	78	64	18	48.75	...	...	...	...	...
...	3,244	1,988	1,303	47	59.45	...	...	...	...	...
...	12,627	5,971	5,687	939	47.28	...	...	...	...	...
...	8,735	5,637	2,340	958	62.24	...	...	...	...	...
...	6,828	3,719	1,769	1,340	54.46	...	...	...	...	...
...	10,370	7,100	1,844	1,416	68.46	...	...	...	...	...
...	291	173	88	30	59.45	...	...	...	...	...
...	4,183	2,845	506	742	68.01	...	...	...	...	...
...	1,036	672	145	219	64.86	...	...	...	...	...
...	6,788	4,309	732	1,747	63.48	...	...	...	...	...
...	3,141	2,032	821	218	68.25	...	...	...	...	...
...	7,132	3,201	1,112	2,725	46.24	...	...	...	...	...
...	6,564	3,638	2,029	847	50.18	...	...	...	...	...
...	4,293	3,241	690	375	75.44	...	...	...	...	...
...	99,762	53,175	24,443	13,144	58.58	...	...	...	...	...

B. & O. G. P. (Sany.) No. 2-380-22-7-1921-H.P.G.



