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Contributors

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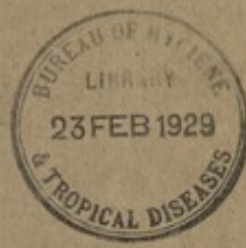
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ANNUAL VACCINATION REPORT

OF
BIHAR AND ORISSA

FOR THE YEAR

1927-28



BY

Lieut-Col. J. A. S. PHILLIPS, D.P.H., I.M.S.,
Offg. Director of Public Health, Bihar and Orissa.



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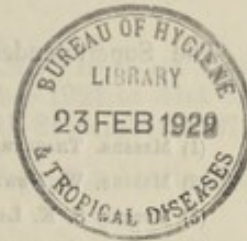


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ANNUAL
VACCINATION REPORT

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Annual Vaccination Report, Bihar and Orissa, for the year 1927-28.

1. *Staff*.—Lieutenant-Colonel J. A. S. Phillips, I.M.S., held charge of the department up to 29th September 1927, when he proceeded to England on combined leave making over charge to Major S. L. Mitra, I.M.S. Lieutenant-Colonel W. C. Ross, I.M.S., returned on 15th October and was in charge for the remaining period of the year.

The undermentioned officers held charge of the three circles for periods as noted against their names :—

- (1) *South Bihar Circle*.—Major S. L. Mitra, I.M.S., from 1st April to 30th June 1927 and again from 1st October 1927 to 31st March 1928. Dr. J. L. Das from 1st July to 30th September 1927.
- (2) *North Bihar Circle*.—Dr. B. P. Mazumdar from 1st April 1927 to 31st March 1928.
- (3) *Chota Nagpur and Orissa Circle*.—Dr. T. Sebastian from 1st April to 11th October 1927 and again from 23rd November 1927 to 31st March 1928.

Major S. L. Mitra, I.M.S., from 12th October to 22nd November 1927.

Dr. T. Sebastian held charge of the Vaccine Depot at Namkum throughout the year except for the period when he was on leave (12th October to 22nd November 1927) when Major S. L. Mitra, I.M.S. held charge.

The Inspecting staff consisted of 20 District Inspectors of Vaccination and 69 Sub-Inspectors of Vaccination (including three deputed for duty at the Vaccine Depot) in addition to the one Sub-Assistant Surgeon combining vaccination inspection with other duties in Angul. The total number of vaccinators employed in the province during the year was 1,062 licensed and 354 paid, against 1,111 licensed and 278 paid in the previous year.

In municipalities and in the districts of Puri and Hazaribagh 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.

2. *Operations performed*.—The total number of operations performed during the year amounted to 1,310,311 as compared with 1,351,084 last year.

This shows a fairly big decrease in the number of operations as compared with the figure for 1926-27.

I suggested in the report for last year that the increase in the number of both primary vaccination and re-vaccination was probably due to a fear of infection, rather than that vaccination was becoming more popular, and the reduction in the number of operations performed in 1927-28 would appear to bear this out. Small-pox raged in epidemic form from the winter of 1925, was most severe in 1926 and began to die down in 1927. The number of vaccinations performed (both primary and re-vaccinations) increased enormously in 1926, but with the decline in the incidence of the disease in 1927 there was a decrease in the number of operations performed.

It is difficult to understand the mentality of people who would appear to appreciate the protective value of vaccination when an epidemic of small-pox occurs, but are reluctant to have their children protected when the disease is not so prevalent. This should surely be an argument in favour of compulsory vaccination.

Of the total number of operations performed 1,287,943 were done by the staff of the vaccination department as compared with 1,332,312 done last year. 1,086,754 operations were primary and 201,189 were re-vaccinations against 1,130,934 primary operations and 201,378 re-vaccinations done last year.

There was a decrease of 44,180 in the number of primary operations and 189 in the number of re-vaccinations during the year. Of the total operations performed (1,287,943), 1,183,071 equal to 93·41 per cent. were successful as compared with 1,239,476 equal to 93·03 last year.

The number of operations performed in municipalities decreased by 15,991 as compared with last year's returns. The total number of operations performed was 56,596 and the number of successful operations was 42,269 of which 34,103 were primary and 8,166 were re-vaccinations, as compared with 34,780 and 15,982 respectively, last year. The ratios of success in municipalities were 96·66 per cent. for primary operations and 38·31 per cent. for re-vaccinations as compared with 96·41 per cent. and 43·77 per cent. respectively, last year.

The number of operations performed in rural areas was 1,231,347 as compared with 1,259,725 last year and the ratios of successes were 99·36 per cent. for primary operations and 53·40 for re-vaccinations.

3. *Vaccination in districts.*—All the three districts of the Patna Division, reported a decrease in the number of operations performed, Patna (26,541), Gaya (13,350) and Shahabad (18,608).

The districts of Muzaffarpur, Saran and Darbhanga recorded increases of 4,724, 9,106 and 14,469 respectively whereas Champaran recorded a decrease of 10,884.

All the districts of the Bhagalpur Division recorded increases. The Purnea district recorded the highest increase in this division, viz., 5,809.

With the exception of Cuttack, all the other districts of Orissa recorded decreases in the number of operations the greatest decrease being in Balasore (16,185). The district of Cuttack recorded an increase of 6,466.

The districts of Palamau, Hazaribagh and Singhbhum recorded increases of 1,594, 4,709 and 86, respectively, whereas Ranchi and Manbhum recorded decreases of 1,206 and 6,099, respectively.

4. *Vaccination in towns and compulsory areas.*—Statement VII shows that during the year, 16,919 children under one year of age, out of an available number of 29,545 or 57·26 per cent. were successfully vaccinated.

The towns of Muzaffarpur, Hajipur, Cuttack and Kendrapara show the smallest proportion of work done, and the towns of Barh and Tikari also made unsatisfactory returns.

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

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

During the year under report 162,182 primary operations and 228,630 re-vaccinations were performed as compared with 177,286 and 294,729 respectively, in the previous year.

6. *Protection of infants.*—During the year under report, the number of children under one year available for vaccination was 1,109,602 and the number of successful operations was 388,998 equal to 350 per thousand against 417,112 or 386 per thousand successful operations out of 1,080,668 children available during the previous year. The protection of infants in municipalities is separately shown in statement VII. It gives a ratio of 572 per thousand of the surviving infant population as compared with 540 in the previous year.

These figures are unsatisfactory inasmuch as they show that far more than half of the total number of operations is performed on children over one year of age. Civil Surgeons and Assistant Directors of Public Health are unanimous in attributing the opposition to vaccination to be concerned more with the age of the child than with the operation itself, as there is a strong prejudice, against vaccination of infants at an early age. The advantages in retaining the limit of age for compulsory primary vaccination as it now stands are obvious, but prejudices in India die hard and it will take years of education to dispel this one.

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 149,154.

During the first quinquennium, the number of deaths was 51,699 and during the second 97,455. In each of the last five years the mortality was as follows:— 3,893, 8,345, 22,748, 35,626 and 26,843.

The provincial ratios of the mortality from small-pox per thousand of population during the last five years have been 0.11, 0.24, 0.67, 1.05 and 0.79.

As indicated in the report for 1926-27 the epidemic of small-pox reached its height in 1926. There was a considerable decrease in the incidence of the disease and in the total number of deaths in 1927-28. This reduction is being maintained and it is fairly safe to predict a normal case incidence and death rate from this disease for the next few years.

8. *Prevention of small-pox.*—The statistics given in the previous paragraph indicate the insufficiency and inefficiency of the existing arrangements for vaccination, and it almost appears as if we relied more on natural causes to eventually arrest an epidemic, than in our efforts at prevention by vaccination.

Small-pox is a preventible disease and vaccination can prevent it, as it has in countries where it is properly carried out. In the light of this knowledge and in face of the above facts there is a great necessity for a stronger and more complete vaccination policy.

The question of compulsory vaccination throughout the province has been under consideration for some time and primary vaccination has been and is being extended to whole districts and areas in districts. Difficulty is still being experienced in certain areas and amongst certain classes notably the Brahmans, Rajputs and Bunniah and in some cases the Muhammadans, of almost every district, and where these difficulties become acute, the Vaccination Act is extended on application from the district officials.

But the process is a slow one, and the time has now come when vaccination should be made compulsory throughout the province and should be free. Compulsory primary vaccination alone, although it will be beneficial, will not solve the difficulty completely. The immunity conferred by vaccination in infancy is by no means lifelong, and if it is seriously desired that small-pox should be eradicated, re-vaccination will also have to be compulsory, until such time as the people themselves come to appreciate the benefits of it.

9. *Inspection of work.*—During the year under report the Assistant Directors of Public Health inspected 73,090 primary vaccinations as against 78,083 in the previous year.

The inspecting work done by the Assistant Directors of Public Health has been comprehensive and they have submitted valuable reports on the efficiency of the staff and work in all the 21 districts in the province.

The Civil Surgeons of the province inspected 30,822 primary and 6,054 re-vaccination operations against 30,934 primary and 7,071 re-vaccinations last year.

It should be noted that the methods of inspection of Civil Surgeons and Assistant Directors of Public Health are different. Civil Surgeons inspected the new work which has just been done and the numbers returned by them are therefore smaller, whereas Assistant Directors of Public Health 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. *Supply of vaccine.*—The Vaccine Depôt 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. 2,994,149 doses of vaccine were manufactured during the year as compared with 4,297,874 doses last year. The number of doses issued was 2,870,661 against 3,238,632 in 1926-27. The number of doses in stock at the end of the year was 5,515,361. The number of cattle used during the year was 518 as compared with 707 in the previous year, and the average yield of crude vaccine was over 59 grammes per animal. The working cost of the depôt for the year amounted to Rs. 24,758 as compared with Rs. 25,686 in the previous year. The average cost of the vaccine per dose works out at 1.58 pies on the gross expenditure, and the sale proceeds of vaccine lymph was Rs. 22,088.

11. *Vaccine Depôt and Cold Storage.*—During the year under report there was no serious epidemic amongst the calves except a mild outbreak of foot and mouth disease in the latter part of January 1928, but it did not interfere with the work as the disease was easily stamped out by prompt isolation and disinfection.

The total mortality amongst calves was low, being only 1.7 per cent.

The cold storage and the machinery worked satisfactorily throughout the year. A few parts to the Lightfoot Ammonia Compressor and the 16 B. H. P. Oil engine were replaced with new ones.

Throughout the year cholera and influenza vaccines were stocked in the depôt and issued throughout the province as required.

12. *Experimental work.*—All seed vaccine was manufactured at the depôt and worked satisfactorily. 6,883.7 grammes of seed vaccine were prepared.

The rejuvenation of the seed vaccine was maintained by passage through children, buffallow-calves and cow-calves.

13. *Cost of the department.*—The total cost of the Vaccination Department (excluding the Vaccine Depôt) during the year, as detailed in Statement II, was Rs. 1,71,180 or Rs. 9,098 more than the previous year. This increase is due partly to the increase of pay earned by the Assistant Director of Public Health, North Bihar Circle.

The cost per successful operation was two annas and three pies against two annas and one pie in the previous year.

14. *Personal.*—In conclusion I desire to bring to the notice of Government the good work done by Assistant Directors of Public Health—Major S. L. Mitra, I.M.S., Dr. T. Sebastian and Dr. B. P. Mazumdar in the inspection of vaccination in their respective circles.

Dr. T. Sebastian held charge of the Vaccine Depôt in addition to his other duties throughout the year except for a brief period when he was on leave.

Dr. C. N. Banerji, the Superintendent of the Depôt, worked satisfactorily.

J. A. S. PHILLIPS, LIEUT.-COLONEL, I.M.S.,

Offg. Director of Public Health,

Bihar and Orissa.

STATEMENT NO. I.—Showing particulars of Vaccination in the

Number.	District.	Population of district according to the census of 1921.	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
<i>Patna Division.</i>									
1	Patna	1,574,287	761	27	8,548	6,655	15,203	561	12,360
	By licensed Vaccinators				29,500	28,392	47,792	903	27,777
2	Gaya	2,152,900	467	30	4,525	5,033	9,558	322	6,942
	By licensed Vaccinators				24,005	22,691	47,496	572	47,103
3	Shahabad	1,816,821	415	15	4,350	3,364	7,714	521	5,788
	By licensed Vaccinators				27,521	25,365	50,886	630	50,059
Total of Patna Division		5,544,036	497	72	17,923	14,052	31,975	444	28,110
	By licensed Vaccinators				81,726	74,445	156,174	652	155,029
<i>Tirhut Division.</i>									
4	Saran	2,326,903	572	11	4,019	3,108	7,127	648	4,500
	By licensed Vaccinators				41,525	37,878	79,403	945	79,399
5	Champaran	3,940,941	549	15	9,512	4,364	14,396	940	2,501
	By licensed Vaccinators				20,699	18,996	39,695	592	38,933
6	Muzaffarpur	2,754,945	907	27	12,004	6,599	18,603	703	3,382
	By licensed Vaccinators				48,498	45,600	94,356	1,194	93,732
7	Darbhanga	2,613,529	670	20	15,383	9,874	25,257	1,263	4,362
	By licensed Vaccinators				50,780	46,515	99,295	1,126	98,644
Total of Tirhut Division		9,640,268	789	73	41,307	24,465	65,772	901	14,504
	By licensed Vaccinators				161,502	151,240	312,741	983	310,607
<i>Bhagalpur Division.</i>									
8	Monghyr	2,029,065	518	7	7,944	3,917	11,861	1,094	3,267
	By licensed Vaccinators				35,838	34,389	70,227	1,151	68,480
9	Bhagalpur	2,033,770	481	12	15,284	5,705	20,989	1,843	5,912
	By licensed Vaccinators				34,076	31,545	65,621	1,041	63,504
10	Purnea	2,024,608	405	15	11,107	4,126	15,233	1,175	2,128
	By licensed Vaccinators				23,081	20,600	43,680	780	41,702
11	Rantol Parganas	1,790,839	329	10	10,295	2,604	12,899	1,569	3,824
	By licensed Vaccinators				29,680	27,999	57,679	664	55,924
Total of Bhagalpur Division		7,886,982	423	42	42,780	18,842	61,772	1,471	18,591
	By licensed Vaccinators				122,675	114,542	237,217	996	227,610
<i>Orissa Division.</i>									
12	Cuttack	2,064,678	565	24	6,189	3,416	9,574	388	2,004
	By licensed Vaccinators				27,181	28,114	55,295	689	50,198
13	Balasore	960,504	470	15	9,151	3,635	12,786	852	1,802
	By licensed Vaccinators				11,612	9,178	20,990	912	14,206
14	Angul	189,874	112	3	3,181	2,946	6,127	3,053	113
	By licensed Vaccinators				8,647	5,522	14,439	1,312	6,666
15	Puri	661,651	380	29	25,552	21,346	46,898	1,721	44,458
	By licensed Vaccinators				359	184	533	131	341
16	Sambalpur	750,466	206	4	359	184	533	131	341
	By licensed Vaccinators				10,054	9,920	19,983	567	19,708
Total of Orissa Division		4,965,673	361	75	47,301	31,352	78,653	1,052	48,718
	By licensed Vaccinators				57,994	47,512	105,707	749	89,766

districts of Bihar and Orissa during the year 1927-28.

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
3,894	6,788	11,625	179	3,323	1,891	307	96'92	86'08	45'78	1'44	9'24	71,422	46'27	780	0'8
18,452	38,301	57,684	18	15	8	---	99'85	83'33		0'03	---				
2,425	3,980	6,814	12	1,516	1,164	50	95'32	79'40	25'93	0'17	3'30	47,060	26'49	1,194	0'45
9,702	38,936	47,094	35	303	245	7	99'94	89'85		0'07	2'31				
2,842	1,754	5,705	24	2,026	1,017	144	98'97	84'04	31'64	0'41	7'11	47,948	31'85	482	0'24
18,181	23,917	40,974	---	827	602	28	99'83	78'15		---	3'14				
9,151	12,522	24,344	215	6,865	3,872	801	97'78	80'84	38'14	0'58	7'29	186,410	38'61	2,467	0'44
40,305	98,026	184,742	50	1,145	876	33	99'85	78'78		0'03	2'88				
1,988	1,848	4,156	43	2,617	1,772	463	97'00	73'07	35'49	0'97	14'22	74,837	31'98	714	0'38
16,869	57,680	78,957	217	4	3	---	99'71	72'00		0'28	---				
683	1,389	2,544	214	11,805	3,382	6,471	98'61	29'84	23'24	8'26	44'81	48,715	28'10	849	0'44
6,227	29,617	38,700	180	703	520	372	99'71	81'84		0'10	45'75				
618	2,471	3,182	65	15,641	5,656	4,317	96'95	81'71	37'26	1'94	27'63	90,404	33'90	838	0'19
14,865	77,817	93,025	27	628	243	17	99'27	44'26		0'02	12'90				
1,689	2,413	4,121	7	20,994	11,415	2,096	96'85	60'40	39'22	---	9'98	95,599	32'81	390	0'13
22,029	75,364	98,242	8	751	380	111	99'79	59'37		0'08	14'76				
5,008	7,819	13,803	228	51,267	22,425	13,286	97'36	59'04	34'78	2'35	25'91	3,12,853	31'41	2,480	0'24
62,590	240,278	308,924	372	2,144	946	500	99'58	58'72		0'38	26'12				
1,431	1,912	3,457	3	8,354	1,805	2,909	98'55	33'54	36'65	6'08	24'24	68,709	33'84	634	0'21
22,746	45,572	68,424	11	1,797	746	479	99'98	86'75		0'01	2'48				
3,042	2,761	5,800	6	13,067	9,961	612	99'00	81'30	40'63	6'10	6'21	60,000	34'28	744	0'24
26,836	88,374	68,137	22	2,117	1,424	141	99'59	72'06		0'08	6'66				
744	1,306	2,089	9	13,095	8,424	2,734	98'12	32'35	26'03	0'42	20'88	45,868	31'68	487	0'24
16,654	24,552	41,813	16	1,208	1,016	317	99'46	62'67		0'03	16'28				
2,121	1,661	3,803	110	11,468	4,686	4,345	99'43	71'07	36'28	2'87	45'08	60,940	35'88	451	0'24
26,196	23,018	83,448	269	3,758	2,071	606	99'61	65'76		0'49	16'13				
7,268	7,540	18,099	128	46,381	21,897	11,800	98'92	63'34	34'08	0'83	28'87	243,640	29'76	2,106	0'24
94,091	131,413	226,892	318	9,607	8,259	1,543	99'69	69'21		0'14	16'02				
396	1,402	1,966	27	7,870	2,812	1,079	98'94	86'22	26'85	1'58	22'18	62,240	28'26	2,761	1'58
19,083	27,189	49,061	73	1,102	419	226	99'88	47'83		0'18	20'40				
300	1,019	1,801	1	10,987	6,630	1,749	100'00	71'77	28'22	6'98	14'92	31,451	32'66	969	0'89
2,223	10,904	14,198	---	6,784	5,042	616	99'94	82'68		---	16'11				
72	38	110	---	5,994	2,961	---	97'24	49'73	20'45	0'78	6'88	11,048	40'81	2	0'91
3,874	2,707	6,591	81	7,783	6,681	83	99'80	88'37		0'78	6'88				
11,689	26,532	43,607	696	5,442	2,475	1,827	99'62	68'46	25'21	1'54	24'87	43,289	46'49	2,382	2'47
197	103	304	11	182	34	143	98'12	87'18		3'22	28'87				
14,748	4,437	19,205	123	275	106	140	98'06	78'82	33'14	0'82	46'90	1,89,344	38'67	6,302	1'24
12,837	29,114	47,778	725	30,175	15,432	5,396	99'55	62'28		1'48	17'80				
40,829	43,177	89,055	249	16,944	12,398	1,105	99'43	83'45	0'27	6'95					

STATEMENT NO. I.—Showing particulars of Vaccination in the

Number.	District.	Population of district according to the census of 1921.	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
					Male.	Female.	Total.		Total.
1	2	3	4	5	6			7	8
<i>Chota Nagpur Division.</i>									
17	Hazaribagh ...	1,276,940	181	39	28,408	22,822	50,938	1,308	43,970
	{ By paid Vaccinators ...								
	{ By licensed Vaccinators ...								
18	Raqohi ...	1,334,478	187	7	6,298	8,401	9,697	1,385	2,821
	{ By paid Vaccinators ...								
	{ By licensed Vaccinators ...								
19	Palamux ...	723,394	149	8	2,170	1,274	3,444	420	1,300
	{ By paid Vaccinators ...								
	{ By licensed Vaccinators ...								
20	Manbhum ...	1,546,777	278	35	17,718	19,033	36,831	881	17,494
	{ By paid Vaccinators ...								
	{ By licensed Vaccinators ...								
21	Singhbhum ...	749,428	195	3	821	889	1,410	470	758
	{ By paid Vaccinators ...								
	{ By licensed Vaccinators ...								
Total of Chota Nagpur Division.		6,653,028	908	92	85,491	40,529	96,320	1,017	65,943
	{ By paid Vaccinators ...								
	{ By licensed Vaccinators ...								
Total of Vaccine Department.		34,002,159	402	1,416	702,794	588,149	1,287,943	969	1,066,764
	{ By paid Vaccinators ...								
	{ By licensed Vaccinators ...								
	{ Total ...								
Total Dispensary Department		...	...	...	60	24	84	...	25
Total Railways		...	...	...	1,864	852	2,716	...	810
Total Cooly Department		...	...	...	1,621	617	2,138	...	27
Total Jails and Cantonments		...	...	...	16,516	914	17,430	...	428
Grand Total		...	...	1,416	722,855	587,456	1,310,311	969	1,088,214

districts of Bihar and Orissa during the year 1927-28—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.			
Under one year.	Successful.			Total.	Successful.	Unknown.	Primary.	Re-vaccination.		Primary.	Re-vaccination.	Number.	Ratio per 1,000 of population.	Number.	Ratio per 1,000 of population.		
	One year and under six years.	Total of all ages.	Unknown.						10							11	12	13	14	15	16	17	18	19	20	21	22	23	24
17,727	25,369	43,337	188	7,368	4,417	1,322	99.80	78.05	38.77	10.43	17.94	38,457	37.43	375	0.29		
...									
2,099	648	2,821	...	6,876	4,569	592	100.00	72.71	43.34	0.004	10.27	50,332	37.71	390	0.29		
39,012	10,069	49,095	2	639	451	101	99.96	84.34									
395	619	1,257	29	2,144	475	1,098	96.99	45.41	30.57	2.28	51.21	18,126	26.98	74	0.16		
12,207	7,791	20,431	13	910	203	382	99.93	23.30									
4,364	11,745	16,429	388	13,337	6,890	1,723	96.04	60.10	45.06	2.22	12.91	61,406	30.71	253	0.16		
24,602	10,503	44,253	...	3,634	2,076	133	99.99	76.45									
386	311	707	21	652	338	147	95.93	66.93	28.19	2.77	22.54	20,650	27.07	211	0.27		
13,097	6,333	19,475	48	2,101	1,165	373	99.76	67.43									
24,941	38,682	64,661	628	30,377	16,659	4,861	98.83	65.34	38.65	0.95	16.06	100,300	33.68	1,303	0.23		
88,918	43,716	133,054	63	7,284	4,495	992	99.95	71.44									
59,325	96,077	165,575	2,022	1,45,045	80,255	35,026	98.76	62.14	34.79	1.19	21.76	1,091,366	32.09	14,061	0.43		
329,673	538,610	913,267	1,051	36,124	23,974	4,233	99.69	75.17									
368,998	654,287	1,078,842	3,073	201,189	104,229	40,189	99.55	64.73	...	...	...	...	...	...	...
2	2	11	...	69	11	...	44.00	18.61									
301	368	705	62	1,906	1,036	176	94.26	69.88	...	7.45	9.23	...	...	...	...
...	...	...	27	2,111	...	2,111	...	...	...	100.00	100.00	...	...	...	...
186	219	459	14	16,932	8,155	1,781	96.90	63.81	...	2.61	10.52	...	...	...	...
369,467	654,876	1,060,027	3,176	222,197	113,431	44,227	99.56	63.73	...	0.29	19.90	...	...	...	...

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.
	2	3	4	5	6	7	8	9	10	11			
	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Vaccinators employed.	Persons vaccinated by each vaccinator.	Under one year.	One and under 6 years.		Rs.	Rs. & p.
BY SPECIAL STAFF.													
Statement (I) ...	1,086,754	201,189	1,088,764	201,189	99.55	64.72	1,408	9.15	338,998	654,287			
BY DISPENSARY STAFF.													
Statement III ...	25	59	25	59	44.00	15.64	...	...	2	2	35.10	11,93,463	0 2 3
BY OTHER AGENCIES.													
Railways Cooly Depot, Jalle and Cantonments.	1,335	20,919	1,335	20,940	95.29	56.44	...	...	487	587			
Total ...	1,088,114	222,197	1,088,114	222,197	99.55	63.73	1,408	9.15	339,487	654,878	35.10	11,93,463	0 2 3

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

No.	Circle and district.	European supervising officer.	Expn-										
			Pay.	Native supervising officer.	Pay.	Paid vaccinators.	Pay.	Licensed vaccinators.	Pay.	Clerks.	Pay.	Peons, etc.	Pay.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
PATNA DIVISION.					Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.
1	Patna ... ..	...	...	5	2,388 13 0	27	3,167 14 0	64	...	...	...	2	340 0 0
2	Gaya ... ..	...	...	5	2,506 1 0	30	2,587 7 0	83	...	...	...	2	216 0 0
3	Shahabad ... ..	...	...	5	2,460 0 0	15	1,338 11 0	82	...	...	...	...	...
Total of Patna Division ... ..			...	15	7,354 14 0	72	7,094 6 0	229	...	...	...	4	556 0 0
TIRHUT DIVISION.													
4	Saran ... ..	...	...	4	2,160 0 0	11	1,304 15 6	84	...	...	...	...	...
5	Champaran ... ..	...	...	3	1,560 0 0	15	1,183 5 3	67	...	...	...	...	...
6	Munaffarpur ... ..	...	...	4	2,068 0 0	27	1,838 0 0	79	...	...	...	...	...
7	Darbhanga ... ..	...	...	4	2,255 0 0	20	1,715 7 3	88	...	...	...	...	...
Total of Tirhut Division ... ..			...	15	8,043 0 0	73	6,041 12 0	318	...	...	...	...	...
BHAGALPUR DIVISION.													
8	Monghyr ... ..	...	...	4	1,980 0 0	7	1,371 0 0	61	...	...	...	1	94 0 0
9	Bhagalpur ... ..	...	...	5	3,476 10 0	12	1,688 12 0	63	...	...	...	...	...
10	Purnea ... ..	...	...	4	1,860 0 0	13	2,619 10 0	56	...	...	...	...	...
11	Santal Parganas ... ..	...	...	7	3,221 8 0	10	2,299 9 6	56	...	...	...	...	...
Total of Bhagalpur Division ... ..			...	20	10,537 8 0	42	8,128 15 6	236	...	...	...	1	94 0 0
ORISSA DIVISION.													
12	Cuttack ... ..	...	...	4	2,100 0 0	25	2,170 9 3	70	...	...	...	...	...
13	Balasore ... ..	...	...	3	1,713 12 0	15	1,827 6 0	28	...	...	...	...	...
14	Angul ... ..	...	...	3	2,273 10 0	2	57 0 0	11	...	...	...	...	...
15	Puri ... ..	...	...	3	1,441 0 0	29	3,503 2 0	...	...	...	...	...	...
16	Sambalpur ... ..	...	...	3	1,615 0 0	4	737 8 0	34	...	...	...	...	...
Total of Orissa Division ... ..			...	16	8,203 6 0	75	7,995 9 3	141	...	...	...	...	...
CHOTA NAGPUR DIVISION.													
17	Hazaribagh ... ..	...	...	4	2,733 10 0	39	4,119 8 4	...	...	...	...	...	...
18	Ranchi ... ..	...	...	5	2,815 0 0	7	896 10 0	45	...	...	...	...	...
19	Palamu ... ..	...	...	3	1,475 0 0	5	944 7 0	25	...	...	...	...	...
20	Manbhum ... ..	...	...	14	2,590 0 0	36	4,682 0 0	46	...	...	...	...	...
21	Singhbhum ... ..	...	...	5	1,600 1 0	3	685 6 0	26	...	...	...	...	...
Total of Chota Nagpur Division ... ..			...	31	10,807 11 0	92	11,927 15 4	156	...	...	...	...	...
Total of Vaccine Circle ... ..			...	97	45,919 1 0	314	40,488 4 1	1,062	...	...	...	5	550 0 0
ESTABLISHMENT OF THE ASSISTANT DIRECTORS OF PUBLIC HEALTH, NORTH BENGAL CIRCLE.			...	1	12,800 4 0	...	...	...	...	2	1,325 3 0	2	262 0 0
Ditto SOUTH BENGAL CIRCLE			...	1	15,545 15 4	...	...	...	...	2	1,408 13 0	2	536 7 0
Ditto CHOTA NAGPUR AND ORISSA CIRCLE.			...	1	12,800 4 0	...	...	...	...	2	1,475 0 0	2	267 0 0
Total ... ..			...	3	41,146 7 4	...	...	...	...	6	4,209 0 0	6	765 7 0
Total of Province ... ..			...	...	67,095 8 4	354	40,488 4 1	1,062	...	6	4,209 0 0	11	1,315 7 0

Province of Bihar and Orissa during the year 1927-28.

ditore.		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.			
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.	Rs. a. p.	
15	16	17	18	19	20	21	22	23	24	25	26	27	
5,795 11 0	1,453 2 0	...	160 0 0	7,349 13 0	...	3,941 15 0	1,536 0 0	1,871 14 0	...	7,349 13 0	72,073	0 1 8	
5,311 8 0	1,883 6 0	...	170 0 0	7,064 14 0	...	8,361 7 0	2,171 7 0	632 0 0	...	7,064 14 0	55,815	0 2 0	
2,708 11 0	1,795 1 0	...	234 1 0	5,888 13 0	...	4,445 12 0	459 5 0	923 12 0	...	5,828 13 0	57,569	0 1 7	
14,900 14 0	4,832 9 0	...	504 1 0	20,243 8 0	...	12,619 2 0	4,161 12 0	3,427 10 0	...	20,243 8 0	185,467	0 1 9	
3,964 15 6	1,105 15 0	...	261 12 0	4,832 0 6	...	3,275 8 0	521 0 6	835 8 0	...	4,832 0 6	45,493	0 0 11	
2,743 5 3	1,078 8 0	...	116 10 9	3,939 8 0	...	2,901 8 0	677 0 0	309 0 0	...	3,938 8 0	45,104	0 1 5	
3,906 0 0	1,215 0 0	...	100 0 0	5,221 0 0	...	3,383 0 0	768 0 0	1,080 0 0	...	5,221 0 0	102,955	0 0 9	
3,970 7 3	1,154 0 0	...	256 10 6	5,261 1 9	...	4,144 13 3	327 1 4	809 3 0	...	5,261 1 9	114,278	0 0 9	
14,084 12 0	4,553 7 0	...	634 7 3	19,272 10 3	...	13,864 13 5	2,283 1 10	3,184 11 0	...	19,272 10 3	347,439	0 0 11	
3,445 0 0	1,309 11 0	...	286 10 0	5,071 5 0	...	3,454 11 0	778 8 0	813 2 0	...	5,071 5 0	74,415	0 1 1	
5,165 6 0	470 9 0	...	234 15 0	5,870 14 0	...	4,607 3 0	1,168 12 0	674 15 0	...	5,870 14 0	82,690	0 1 1	
4,719 10 0	1,727 3 6	...	197 0 0	6,643 13 6	...	3,499 14 3	1,931 13 0	1,212 2 3	...	6,643 13 6	50,685	0 2 1	
5,451 1 6	2,772 1 0	...	108 13 0	8,311 15 6	...	6,093 9 0	1,375 7 9	842 14 9	...	8,311 15 6	65,332	0 2 0	
18,761 1 6	6,339 8 6	...	797 6 0	15,898 0 0	...	17,085 5 3	5,239 8 9	3,573 2 0	...	25,898 0 0	272,992	0 1 5	
4,380 9 3	1,327 4 0	...	146 0 0	5,803 13 3	...	3,633 4 0	1,724 9 0	846 0 3	...	5,803 13 3	55,026	0 1 8	
3,341 2 0	964 9 0	...	90 0 0	4,285 11 0	...	4,087 2 0	...	189 9 0	...	4,285 11 0	37,671	0 2 6	
2,330 10 0	1,069 11 0	...	70 0 0	3,563 5 0	...	3,500 5 0	...	...	...	3,500 5 0	16,513	0 3 5
4,944 2 0	1,120 8 0	...	135 0 0	6,199 10 0	...	2,691 8 0	3,319 2 0	193 0 0	...	6,199 10 0	48,288	0 2 0	
2,352 8 0	1,051 15 0	...	112 8 6	3,516 15 6	...	2,761 15 0	497 8 0	258 8 6	...	3,516 15 6	19,904	0 2 10	
17,198 15 3	5,553 15 0	...	563 8 6	23,306 6 9	...	16,084 2 0	5,132 3 0	1,890 1 9	...	23,306 6 9	165,362	0 2 3	
6,653 2 4	413 12 0	...	109 0 0	7,366 14 4	...	4,090 8 0	2,779 14 1	566 8 3	...	7,366 14 4	49,508	0 2 8	
3,715 10 0	1,800 3 0	...	351 13 0	5,967 10 0	...	5,061 0 0	165 0 0	731 10 0	...	5,967 10 0	67,840	0 1 8	
2,419 7 0	957 8 0	...	64 9 0	3,471 8 0	...	2,472 12 0	615 7 0	353 5 0	...	3,471 8 0	22,419	0 2 5	
6,462 0 0	245 0 0	...	104 0 0	7,311 0 0	...	2,393 0 0	4,328 0 0	615 0 0	...	7,311 0 0	70,728	0 1 8	
2,185 7 0	690 13 0	...	690 13 0	2,985 2 9	...	2,264 12 6	...	720 6 3	...	2,985 2 9	21,713	0 2 3	
22,036 10 4	4,327 4 0	...	729 4 9	27,092 3 1	...	16,197 0 6	7,818 5 1	3,076 13 6	...	27,092 3 1	222,208	0 1 11	
86,967 5 1	25,608 11 6	...	3,218 11 6	1,16,812 12 1	...	76,429 7 2	24,639 14 8	14,762 6 3	...	1,16,812 12 1	1,103,468	0 1 6	
14,387 7 0	2,475 4 0	...	1,089 12 3	17,955 7 3	...	17,952 7 3	...	...	...	17,953 7 3	...	...
17,191 3 4	1,843 12 0	...	830 3 6	19,865 2 10	...	19,865 2 10	...	...	...	19,865 2 10	...	...
14,512 4 0	2,067 4 0	...	339 10 6	17,549 2 6	...	17,549 2 6	...	...	...	17,549 2 6	...	...
46,120 14 4	6,980 4 0	...	2,259 10 3	55,366 10 7	...	55,366 10 7	...	...	...	55,366 10 7	...	...
1,38,108 3 5	32,692 15 6	...	5,476 5 9	17,479 8 8	...	1,31,767 3 9	14,630 14 8	14,762 6 3	...	1,71,179 8 8	...	0 2 3	

B.—DISPENSARY VACCINATION.

STATEMENT NO. III.—Showing Dispensary Vaccination in the Province of Bihar and Orissa during the year 1927-28.

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
Patna
Gaya
Shahabad
Saran
Champaran
Muzaffarpur
Darbhanga	84	...	25	2	2	11	...	59	11	...	44.00	15.64	...	...
Monghyr
Bhagalpur
Parua
Santal Parganas
Cuttack
Balasore
Angul
Parl
Sambalpur
Hazaribagh
Ranchi
Palmas
Manblum
Singhbhum
Total	84	...	25	2	2	11	...	59	11	...	44.00	15.64	...	...

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

Establishment.	Persons primarily							
	1918-19.		1919-20.		1920-21.		1921-22.	
	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	6,637	5,941	7,363	6,520	1,927	1,831	891	825
Municipal	36,573	35,213	36,810	35,428	32,858	31,541	31,136	30,040
Local Fund	59,639	56,495	69,847	66,946	80,337	77,939	71,144	68,523
Dispensaries... ..	139	139	178	178	262	262	...	...
Licensed Vaccinators	816,096	811,506	811,168	806,217	854,339	848,948	800,424	797,357
Total	919,084	909,294	925,366	915,289	969,723	960,521	903,595	896,745

COMPARATIVE STATEMENT NO. IV.

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

vaccinated.

1922-23.		1923-24.		1924-25.		1925-26.		1926-27.		1927-28.	
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
794	735	1,104	1,018	785	725	885	772	3,577	3,636	10,552	10,353
29,927	28,963	33,760	32,833	32,110	30,816	40,318	39,370	36,075	34,780	35,281	34,103
70,386	67,809	74,767	71,969	75,649	72,592	89,670	85,927	88,599	86,061	124,332	121,588
...	...	1	1	...	...	...	...	...	...	25	11
865,920	862,260	892,018	888,273	882,812	879,951	954,242	951,893	1,002,984	1,000,124	917,087	913,267
967,027	959,767	1,001,650	994,094	991,356	984,084	1,085,085	1,077,962	1,131,535	1,124,601	1,087,277	1,079,322

STATEMENT NO. V.—Showing particulars of vaccination

District.	Total number inspected—												Percentage of	
	Total number of persons vaccinated.		By Assistant Directors of Public Health or Civil Surgeons.				By Native Superintendents or other Inspecting Officers.				By Assistant Directors of Public Health.			
			Assistant Directors of Public Health.		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.
1	2	3	4	5	6	7	8	9	10	11	12	13		
Patna ...	70,566	4,501	3,205	...	...	...	6,682	15	15,287	...	454	...
Gaya ...	54,137	2,737	5,852	...	705	...	9,437	...	11,964	214	10'81	...		
Shahabad ...	55,847	3,897	2,182	...	546	...	7,513	65	13,174	170	4'62	...		
Saran ...	83,699	3,534	8,040	...	3,040	...	7,530	...	23,394	...	9'60	...		
Champaran ...	41,523	13,128	4,859	...	809	569	7,743	387	16,126	702	11'70	...		
Muzaffarpur ...	97,141	17,163	13,526	...	2,183	806	12,366	35	27,357	484	13'92	...		
Darbhanga ...	1,02,837	22,947	...	...	1,055	151	12,902	137	25,785	444	...	...
Monghyr ...	71,917	10,151	10,411	...	1,868	...	14,329	...	23,315	200	14'47	...		
Bhagalpur ...	61,426	19,764	...	...	907	...	10,529	333	23,014	...	...	...
Purnea ...	43,890	16,319	...	...	2,250	12	9,370	564	8,300	12	...	...
Santal Parganas ...	57,979	17,338	...	...	2,998	1,275	2,281	...	17,908	706	...	...
Cuttack ...	61,197	9,364	2,285	...	...	684	8,082	196	19,595	191	4'48	...
Balasore ...	16,908	17,771	912	...	91	...	5,270	491	8,633	1,905	5'69	...		
Angul ...	6,782	14,733	1,466	...	1,294	215	843	315	5,901	11,060	21'47	...		
Puri ...	41,428	5,885	2,216	...	895	506	11,486	2,025	18,336	3,079	4'98	...		
Sambalpur ...	20,049	1,094	1,336	...	918	425	5,183	95	6,226	...	6'06	...		
Hazaribagh ...	41,166	9,824	8,486	...	2,803	...	4,364	...	5,403	109	19'21	...		
Ranchi ...	52,518	7,984	3,337	...	300	...	9,885	...	25,912	...	6'33	...		
Palamanu ...	31,771	3,887	903	...	4,259	102	5,213	95	7,080	148	4'15	...		
Manbhum ...	61,851	18,199	1,014	...	3,728	1,226	5,413	458	7,193	377	1'64	...		
Singbhum ...	20,332	2,787	2,673	...	773	...	4,171	90	7,647	614	13'13	...		
Total ...	16,88,114	2,22,197	73,000	30,822	6,954	1,61,641	5,180	321,039	20,466	6'71	...	

verified by Inspecting Officers during the year 1927-28.

Inspection to total number vaccinated.						Percentage of cases found successful to total number inspected.										Percentage of successful cases reported by vaccinators.	
Officers of Public Health Surgeons.		By Native Superintendents or other Inspecting Officers.				By Assistant Directors of Public Health or Civil Surgeons.				By Native Superintendents or other Inspecting Officers.							
Civil Surgeons.		District Inspectors.		Sub-Inspectors.		Assistant Directors of Public Health.		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		
...	...	9.42	0.28	21.06	...	91.38	...	...	...	98.41	23.07	98.30	...	...	...
1.30	...	17.45	...	22.10	7.65	95.17	...	100.00	...	99.29	...	98.89	82.71	99.56	70.22		
0.97	...	13.45	1.67	22.58	4.36	94.92	...	97.89	...	99.16	49.15	90.78	51.76	99.09	58.74		
4.37	...	9.00	...	27.95	...	98.84	...	100.00	...	100.00	...	100.00	...	99.40	64.79		
2.09	4.26	18.64	2.94	38.83	5.34	97.17	...	98.84	63.92	97.95	33.33	98.72	64.67	99.64	64.96		
2.24	5.22	12.72	0.14	28.16	2.82	99.74	...	99.95	32.56	98.76	50.00	98.82	31.81	98.16	6.71		
1.02	0.68	12.68	0.62	25.07	2.01	...	...	100.00	60.26	98.62	63.50	99.20	68.02	99.55	53.51
2.18	...	19.92	...	32.42	1.91	99.24	...	100.00	...	100.00	...	100.00	100.00	99.91	19		
1.35	...	15.16	1.15	33.15	...	...	...	97.12	...	97.56	71.67	97.84	...	99.18	74.92
5.12	0.97	21.34	3.45	18.91	0.07	...	...	100.00	100.00	100.00	100.00	100.00	100.00	99.34	43.40
5.17	7.35	3.93	...	39.18	4.07	...	...	97.29	81.78	97.19	...	93.55	89.89	98.93	48.44
...	7.30	16.79	2.09	38.27	2.03	93.43	...	...	49.05	99.46	33.67	97.09	19.37	99.64	42.81
0.56	...	32.92	2.76	53.30	10.72	86.43	...	98.99	...	99.89	80.24	77.98	54.22	99.95	70.10		
19.99	1.46	12.43	2.14	67.01	75.07	98.99	...	99.92	76.74	97.86	52.69	97.64	63.41	98.99	71.22		
2.61	8.59	25.77	37.21	41.24	52.32	95.12	...	99.19	30.56	98.76	12.64	98.63	11.88	98.08	44.88		
4.67	42.33	26.40	9.46	31.05	...	98.05	...	98.91	39.29	92.91	53.08	85.21	...	97.31	39.34		
6.34	...	9.88	...	19.02	1.63	98.34	...	99.17	...	96.65	...	98.67	51.25	99.13	47.82		
0.57	...	18.82	...	49.34	...	98.57	...	100.00	...	100.00	...	99.85	...	99.99	60.68		
10.52	2.65	23.94	2.38	35.78	3.71	93.46	...	99.43	37.25	98.90	37.89	99.07	37.67	99.62	18.39		
4.41	6.75	8.75	2.61	11.63	2.07	86.88	...	98.71	33.38	97.28	76.85	99.16	80.39	99.89	59.70		
3.89	...	20.51	3.22	37.61	22.03	89.51	...	98.31	...	98.34	86.66	98.70	78.34	99.28	64.75		
2.83	2.72	14.76	2.33	29.50	9.22	97.94	...	86.74	32.90	95.90	45.59	92.25	52.01	94.54	61.11		

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

District.	1918-19.		1919-20.		1920-21.		1921-22.	
	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 ...	0·3	68,535	0·85	68,573	2·79	71,340	0·46	63,297
Gaya ...	0·21	56,114	0·62	66,449	0·77	60,538	0·24	42,710
Shahabad ...	0·02	41,625	0·24	42,304	0·55	62,418	0·22	69,010
Saran ...	0·07	66,443	0·10	66,882	0·39	68,000	0·3	37,665
Champaran ...	0·14	50,191	0·13	53,458	0·29	56,914	0·08	36,927
Muzaffarpur ...	0·02	86,664	0·10	87,182	0·13	89,230	0·04	82,124
Darbhanga ...	0·08	86,555	0·10	88,770	0·17	93,463	0·03	88,504
Monghyr ...	0·05	56,576	0·24	59,814	0·28	55,104	0·14	54,215
Bhagalpur ...	0·09	59,034	0·23	66,741	0·22	58,176	0·13	62,115
Purnea ...	0·52	54,209	0·96	50,349	0·98	51,930	0·29	36,428
Santal Parganas ...	0·06	46,659	0·30	44,691	0·37	45,864	0·05	50,187
Cuttack ...	0·89	51,845	0·91	55,008	0·30	60,775	0·04	61,424
Balasore ...	0·09	20,942	0·86	22,139	0·54	27,597	0·09	25,380
Angul ...	0·06	6,751	1·11	5,739	...	4,060	...	4,968
Puri ...	0·75	33,543	3·12	32,940	0·77	41,235	0·08	34,897
Sambalpur ...	0·07	15,361	0·68	13,835	0·27	18,523	0·03	20,829
Hazaribagh ...	0·07	35,632	0·24	35,026	0·13	29,123	0·02	20,524
Ranchi ...	0·04	31,870	0·90	40,559	1·38	38,450	0·21	38,997
Palamau ...	0·06	20,472	1·26	21,226	1·76	19,346	0·56	16,898
Manbhum ...	0·05	37,807	0·44	57,908	0·11	43,192	0·02	43,484
Singhbhum ...	0·10	15,542	1·24	19,595	0·52	18,023	0·32	16,605
Total ...	0·17	942,370	0·53	989,278	0·56	1,013,696	0·14	917,188

small-pox and the number of successful vaccinations during the ten years ending 1927-28.

1922-23.		1923-24.		1924-25.		1925-26.		1926-27.		1927-28.	
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
0.05	62,873	0.06	61,595	0.13	65,553	0.49	72,006	1.69	95,281	1.07	72,073
0.04	47,263	0.04	51,137	0.04	54,569	0.46	63,986	2.21	68,243	1.21	55,815
0.04	58,782	0.02	59,661	0.10	40,418	0.16	56,596	0.99	74,284	1.60	57,569
0.02	66,871	0.05	72,449	0.44	76,858	0.50	81,358	0.50	76,650	0.75	85,402
0.06	44,499	0.09	45,103	0.38	45,011	0.65	50,934	0.98	58,018	0.34	45,104
0.04	86,141	0.12	92,087	0.21	91,519	0.24	97,064	0.36	100,208	0.56	102,655
0.06	88,188	0.05	93,651	0.15	90,640	0.12	101,040	0.27	104,475	0.34	114,278
0.11	62,958	0.09	70,828	0.12	61,341	0.11	71,423	0.62	76,993	0.93	74,415
0.09	64,294	0.48	65,464	0.46	66,255	0.13	74,520	0.65	79,116	1.13	82,640
0.24	38,977	0.06	35,218	0.04	43,877	0.17	48,715	0.69	51,540	0.95	50,685
0.01	55,085	0.03	56,056	0.06	60,838	0.17	62,352	0.90	67,396	1.06	65,252
0.15	61,752	0.28	46,041	0.77	45,282	2.50	62,758	2.92	45,413	0.95	55,026
0.17	23,541	0.37	30,195	0.34	25,376	1.71	35,409	2.34	42,633	1.42	27,671
0.005	5,511	...	6,159	...	6,168	...	19,937	0.06	17,465	0.08	16,513
0.13	35,208	0.25	36,479	1.21	36,877	7.21	61,320	3.54	46,560	0.47	46,248
0.006	18,791	0.01	23,757	0.12	21,487	0.60	21,881	0.68	20,771	0.27	19,904
0.02	31,985	0.03	35,784	0.05	36,243	0.34	44,380	1.00	45,942	0.73	49,508
0.05	41,821	0.01	44,812	0.02	49,358	0.34	57,397	1.02	58,274	0.39	57,840
0.09	15,585	0.04	16,466	0.01	19,747	0.06	21,210	0.28	22,624	1.01	22,419
0.02	52,428	0.01	58,031	0.02	50,700	0.32	71,523	0.42	74,816	0.17	70,728
0.18	16,998	0.14	16,058	0.36	22,511	0.52	25,635	0.16	21,596	0.13	21,713
0.07	979,351	0.11	1,017,031	0.24	1,010,628	0.67	1,201,444	1.05	1,248,328	0.19	1,193,458

STATEMENT NO. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1927-28.

District.	Towns.	Number of births during the year ending 31st March 1928.	Number of deaths amongst infants under one year during the year ending 31st March 1928.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1928.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Patna	Patna	2,958	466	1,126	1st October 1884.
	Bihar	1,522	205	394	1st April 1887.
	Dinapur	1,062	232	677	28th January 1891.
	Barh	356	72	63	1st April 1887.
	Khagole	345	65	84	12th July 1910.
	Total	6,243	1,040	2,344	
Gaya	Gaya	2,211	691	1,213	1st January 1883.
	Tikari	240	39	44	3rd January 1891.
	Daudnagar	350	52	131	Ditto.
	Total	2,801	782	1,388	
Shahabad	Arrah	1,242	193	872	20th July 1885.
	Buxar	335	54	183	1st April 1887.
	Dumraon	422	69	122	Ditto.
	Jagadispur	342	55	273	20th December 1890.
	Sassaram	693	96	495	1st April 1887.
	Bhabhua	198	44	135	Ditto.
	Total	3,232	511	2,080	
Total of Patna Division.		12,276	2,333	5,812	
Saran	Chapra	1,306	156	1,133	1st April 1887.
	Revelganj	446	63	433	12th December 1890.
	Siwan	443	92	335	1st April 1887.
	Total	2,195	311	1,901	
Champan	Motihari	497	39	218	1st April 1887.
	Bettiah	601	24	149	Ditto.
	Total	1,098	63	367	

STATEMENT NO. VII.—Showing the protection afforded to infants in each town in the Provinces of Bihar and Orissa during the year 1927-28—contd.

District.	Towns.	Number of births during the year ending 31st March 1928.	Number of deaths amongst infants under one year during the year ending 31st March 1928.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1928.	Date of extension of Vaccination Act to towns.
1	2	3	4	5	6
Muzaffarpur ...	Muzaffarpur ...	1,392	189	238	1st January 1886.
	Sitamarhi ...	375	53	67	1st April 1887.
	Hajipur ...	815	129	100	1st May 1890.
	Lalganj ...	335	55	80	1st April 1887.
	Total ...	2,920	426	485	
Darbhanga ...	Darbhangha ...	1,811	247	638	24th May 1884.
	Roserha ...	214	24	100	3rd January 1891.
	Samastipur ...	246	40	73	25th July 1910.
	Madhubani ...	617	78	335	1st April 1887.
	Total ...	2,888	391	1,146	
Total of Tirhut Division.		9,101	1,191	3,899	
Monghyr ...	Monghyr ...	1,901	302	591	15th November 1882.
	Jamalpur ...	1,095	208	307	Ditto.
	Total ...	2,996	510	898	
Bhagalpur ...	Bhagalpur ...	1,711	275	1,238	15th February 1884, withdrawn on 16th October 1895; re-extended on 18th August 1898.
	Colgong ...	167	26	37	Ditto, re-extended on 19th December 1901.
	Total ...	1,878	301	1,275	
Purnea ...	Purnea ...	344	33	175	1st July 1887.
	Kishanganj ...	144	21	140	12th November 1892.
	Katihar ...	223	18	74	8th August 1910.
	Forbesganj ...	128	18	37	9th August 1912.
	Total ...	839	90	426	

STATEMENT NO. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1927-28—contd.

District.	Towns.	Number of births during the year ending 31st March 1928.	Number of deaths amongst infants under one year during the year ending 31st March 1928.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1928.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Santal Parganas ...	Sahibganj ...	388	15	215	1st May 1884.
	Deoghar ...	137	6	158	Ditto.
	Madhupur ...	126	...	85	22nd August 1910.
	Dumka ...	191	5	151	Notifications, dated the 9th April 1884, and 23rd August 1910.
	Total ...	842	26	609	
Total of Bhagalpur Division.		6,555	927	3,208	
Cuttack ...	Cuttack ...	1,031	144	179	1st September 1884.
	Kendrapara ...	340	74	33	7th February 1888.
	Jajpur ...	173	28	61	Ditto.
	Total ...	1,544	246	273	
Balasore ...	Balasore ...	343	52	101	7th February 1888.
Puri ...	Puri ...	620	218	211	Ditto.
Sambalpur ...	Sambalpur ...	370	66	195	7th March 1895.
Total of Orissa Division.		2,877	582	780	
Hazaribagh ...	Hazaribagh ...	500	35	332	1st January 1885.
	Chatra ...	321	31	266	1st August 1885.
	Giridih ...	479	61	118	8th September 1910.
	Total ...	1,300	127	716	
Ranchi ...	Ranchi ...	880	47	1,245	1st April 1887.
	Lohardaga ...	226	26	201	25th June 1882.
Total ...		1,106	73	1,446	

STATEMENT NO. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1927-28—concl'd.

District.	Towns.	Number of births during the year ending 31st March 1928.	Number of deaths amongst infants under one year during the year ending 31st March 1928.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1928.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Palamau	Daltonganj	142	27	69	9th October 1890.
Manbhum	Purulia	427	12	221	1st January 1887.
	Raghunathpur	190	19	247	9th February 1894.
	Jhalda	254	18	160	9th July 1892.
	Dhanbad	78	7	5	5th December 1918.
	Total	949	56	633	
Singhbhum	Chaibassa	263	39	152	20th June 1892.
	Chakradharpur	140	23	89	13th January 1919.
	Jugsalai	229	15	115	1st April 1924.
	Total	632	77	356	
Total of Chota Nagpur Division.		4,129	360	3,220	
Total for the Province		34,938	5,393	16,919	

Provincial Statement showing the different kinds of lymph

District.	Primary vaccination											
	District 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	70,566	69,892	468	206	99.04	...	...
Gaya	54,137	53,900	190	47	99.56	...	...
Shahabad	55,847	55,679	144	24	99.69	...	...
Saran	83,699	83,113	327	259	99.30	...	...
Champaran	41,521	41,944	145	334	98.84	...	...
Muzaffarpur	97,141	96,264	785	92	99.09	...	...
Darbhanga	102,837	102,379	443	15	99.55	...	...
Monghyr	71,937	71,861	62	14	99.89	...	...
Bhagalpur	69,426	69,087	311	28	99.51	...	...
Parasn	48,890	48,612	263	25	99.34	...	...
Santal Parganas	57,979	57,372	228	379	98.95	...	...
Cuttack	51,197	51,017	80	100	99.64	...	...
Balasore	16,098	15,999	8	1	99.94	...	...
Angul	6,782	6,701	16	65	98.80	...	...
Puri	44,458	44,607	165	686	98.08	...	...
Sambalpur	20,049	19,509	406	134	97.31	...	...
Hasnabagh	44,166	43,827	88	251	99.23	...	...
Ranchi	52,518	52,516	...	2	99.99	...	...
Palamu	21,771	21,689	27	55	99.62	...	...
Manbhum	61,851	60,782	679	390	98.27	...	...
Singbhum	20,342	20,187	76	60	99.28	...	...
TOTAL	1,088,114	1,089,027	4,911	3,176	99.35	...	...

II.

used and their rates of success during the year 1927-28.

vaccination.			Re-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
...	4,501	2,181	1,949	461	47.50	...	...	...	...	...
...	2,727	1,915	675	137	70.22	...	...	...	...	...
...	3,897	1,890	1,885	172	48.49	...	...	...	...	...
...	3,534	2,289	772	473	61.77	...	...	...	...	...
...	13,128	4,060	2,190	6,878	30.92	...	...	...	...	...
...	17,163	6,391	6,301	4,471	37.23	...	...	...	...	...
...	22,047	11,899	7,681	2,267	53.51	...	...	...	...	...
...	10,151	2,554	4,149	3,448	25.16	...	...	...	...	...
...	19,764	13,553	4,869	1,312	68.57	...	...	...	...	...
...	16,319	7,063	5,944	3,292	43.40	...	...	...	...	...
...	17,338	7,580	3,375	6,083	45.44	...	...	...	...	...
...	9,364	4,009	3,256	2,099	42.81	...	...	...	...	...
...	17,771	11,672	3,654	2,435	65.68	...	...	...	...	...
...	14,733	9,812	3,912	1,009	66.29	...	...	...	...	...
...	5,885	2,641	1,414	1,830	44.87	...	...	...	...	...
...	1,004	305	307	302	39.94	...	...	...	...	...
...	9,824	5,681	2,195	1,948	57.82	...	...	...	...	...
...	7,984	5,324	1,923	737	69.86	...	...	...	...	...
...	3,957	730	972	2,285	18.30	...	...	...	...	...
...	18,109	9,946	6,215	2,038	54.65	...	...	...	...	...
...	2,787	1,526	741	320	54.75	...	...	...	...	...
...	222,197	113,431	64,539	44,227	51.05	...	...	...	...	...

