SUPPLEMENTARY APPENDIX

SUPPLEMENT TO:

Johri M, Rajpal S, Kim, R. Subramanian SV. Small-area variation in child under-vaccination in India: A multilevel analysis of 36 states and Union Territories, 707 districts, and 22,349 small-area clusters

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1. SUPPLEMENTARY METHODS

1.1 The National Family Health Survey 2019-21 (NFHS-5)

The NFHS series is part of the Demographic and Health Surveys (DHS) Program, which has conducted more than 400 surveys in over 90 countries. Initiated in 1992-93 to provide estimates of important indicators on population, health and nutrition for India, the NFHS surveys contribute essential data on health and family welfare and on key emerging issues. The NFHS-5 (2019-2021) is the fifth survey in India's NFHS series.

All five NFHS surveys covered geographic areas comprising more than 99% of India's population. The sampling approach was refined over survey rounds to achieve increasingly fine geographic representation. In NFHS-I (1992-93), the goal was to generate national and state-level estimates[1], in NFHS-2 (1998-99), to generate national and state-level estimates, rural-urban estimates for most states, regional estimates for four states, and estimates for three major cities,[2] and in NFHS-3 (2005-06) to generate national and state-level estimates, rural-urban estimates for all states, and estimates for the slum and non-slum populations of eight major cities.[3] District-level representation was first achieved in the NFHS-4 (2015-16), which was designed to provide estimates for all 29 states, 7 union territories, and 640 districts, as well as the slum populations of 8 major cities.[4] The NFHS-5 provides representative information for all of India's 707 districts (as of March 31, 2017), 28 states, and 8 union territories.[5] The original sizes of the surveys were (number of households) NFHS-1 (88,562),[1] NFHS-2 (92,486),[2] NFHS-3 (109,041),[3] NFHS-4 (609,120),[4] and NFHS-5 (636,699).[5]

Although the NFHS-5 included all states and union territories and achieved excellent geographical coverage, some areas, including conflict-affected, remote, or small, low-density settings, may nonetheless have been excluded. Notably, the NFHS-5 was conducted in part during the context of the Covid-19 pandemic. Although survey roll-out was adjusted, data collection methods (face-to-face interviews) remained unchanged throughout the NFHS-5, so that representativity and comparability between the phases were preserved.

The NFHS surveys divide populations by urban and rural area of residence and use the most recent available national census data to define the sampling frame. The NFHS-5 sample is a stratified two-stage sample. In the first stage, India's 2011 census served as the sampling frame for the selection of primary sampling units (PSUs). The sampling frame was divided into geographic regions (states, UTs, districts) and the lowest level geographies (districts) were further subdivided into urban/rural strata. In rural areas, PSUs were villages; in urban areas, PSUs were Census Enumeration blocks. The NFHS surveys used a multistage design with stratified sampling for specific groups of interest, including scheduled castes and tribes, and women with low levels of literacy. In each rural stratum, six approximately equal substrata were created reflecting population size and the proportion belonging to a scheduled caste or tribe (SC/ST). Within each substratum, PSUs were sorted by the literacy rate of females 6 years of age and older, and selected for inclusion using probability proportional to size (PPS) systematic sampling (a random sampling method for ordered sampling frames based on a random starting point and a consistent sampling interval). In urban areas, PSUs were sorted by the proportion SC/ST and selected using PPS systematic sampling. In the second stage, prior to the main survey, a complete household enumeration was conducted in each selected rural and urban PSU. Selected PSUs with 300 households or more were divided into segments of approximately 100-150 households, and two segments were randomly selected using PPS systematic sampling. Thus, an NFHS-5 cluster is either a PSU or a segment of a PSU. Finally, in every included rural and urban cluster, a fixed number of 22 households was selected from the enumeration list for the survey with equal probability using systematic selection.[5] We applied the appropriate survey sampling weights to adjust for the multistage design and ensure that prevalence estimates are representative of the population.

The NFHS surveys have consistently achieved very high response rates of 95% or higher. The NFHS-5 gathered information from 636,699 households, 724,115 women, and 101,839 men, achieving a household response rate of 97.5%, while 96.9% of eligible women completed the woman's questionnaire.[5] As is standard in vaccination coverage surveys, in the NFHS series, vaccination data is collected from two sources, the vaccination card and caregiver recall. The vaccination history data captured in the NFHS-5 are virtually all pre-pandemic. WHO declared Covid-19 a pandemic on March 11, 2020. The last NFHS-5 data collection date is 30 April 2021. Vaccination data are collected from children 12-23 months of age. Hence, the latest date for which data would have been collected represents vaccination delivery experiences at latest on 30 April 2020.

1.2 Construction of the analysis sample

Figure S1. Flow diagram describing construction of the analysis sample, National Family Health Survey 2019-21 (NFHS-5), India
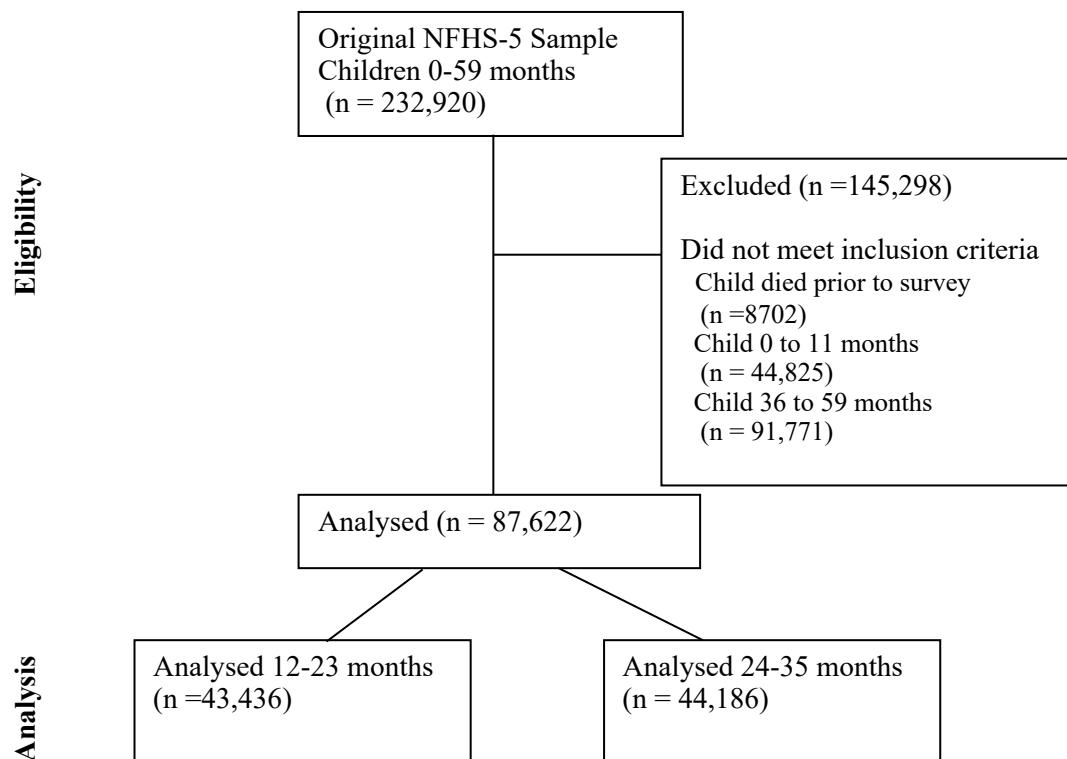
Note: the raw dataset included 232,920 children from 168,273 households. After application of exclusion criteria, the analysis included 87,622 children from 85,131 households.

1.3 Statistical convergence of the Bayesian analysis

Figure S2. Trace plots - MCMC diagnostics for all four outcomes, Sample – All Clusters
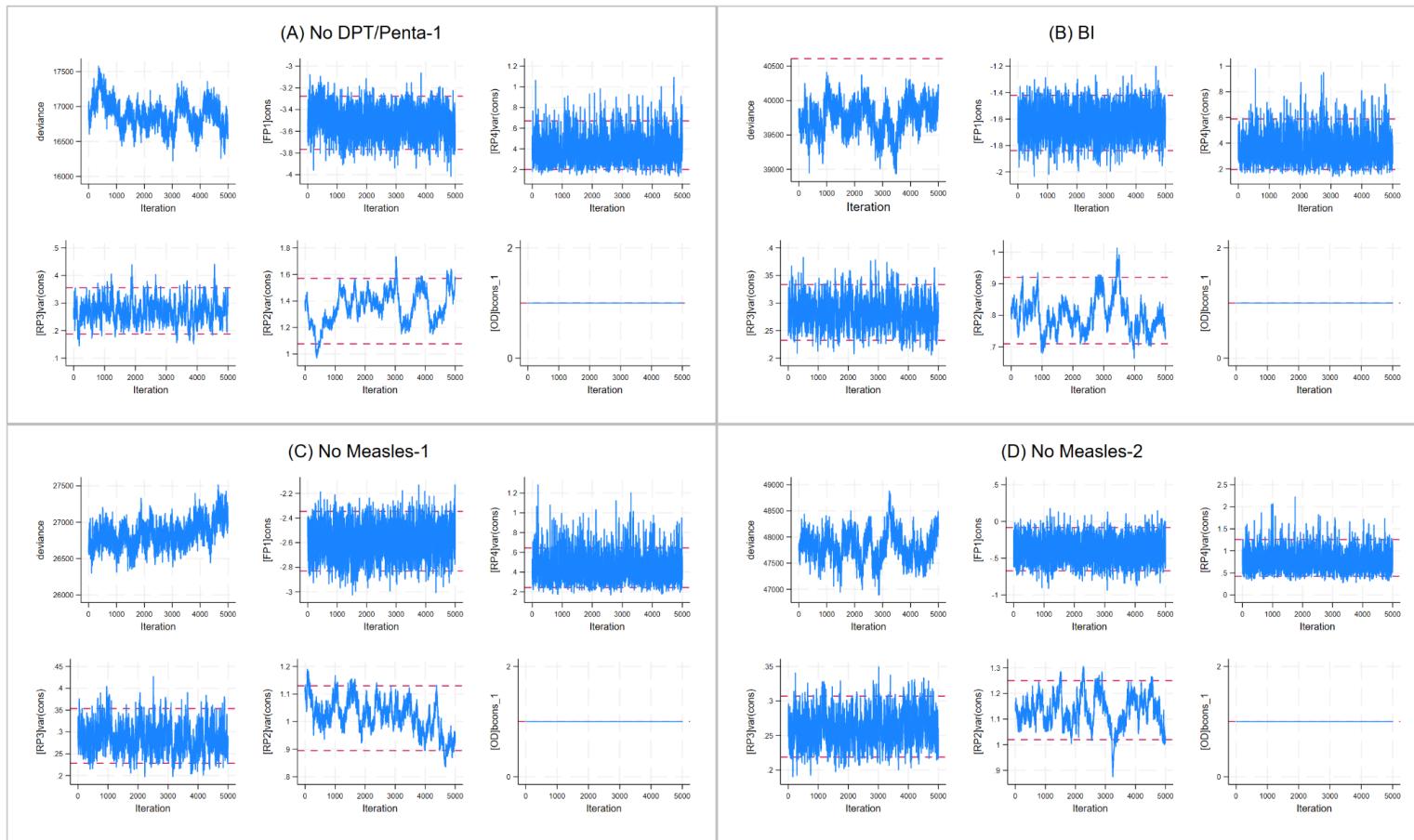
Table S1. MCMC Diagnostics Summary for all four outcomes, Sample – All Clusters

No DPT/Penta-1						
Mean	Mean	Std. Dev.	ESS	P	[95% Cred.	Interval]
[FP1]cons	-3.511299	0.123872	285	0.00	-3.76648	-3.2775
[RP4]var(co~)	0.381632	0.123139	971	0.00	0.200615	0.670445
[RP3]var(co~)	0.2678542	0.040876	141	0.00	0.187711	0.355834
[RP2]var(co~)	1.355326	0.126838	16	0.00	1.076681	1.569618
[OD]bcons_1	1	0	0	0.00	1	1
BI						
Mean	Mean	Std. Dev.	ESS	P	[95% Cred.	Interval]
[FP1]cons	-1.62759	0.107153	1835	0	-1.83877	-1.42045
[RP4]var(co~)	0.3436714	0.100814	1216	0	0.194366	0.588587
[RP3]var(co~)	0.2800951	0.025636	339	0	0.232396	0.333538
[RP2]var(co~)	0.8011783	0.054403	22	0	0.709703	0.920645
[OD]bcons_1	1	0	0	0	1	1
No Measles-1						
Mean	Mean	Std. Dev.	ESS	P	[95% Cred.	Interval]
[FP1]cons	-2.58614	0.121336	2035	0	-2.83139	-2.34627
[RP4]var(co~)	0.4310115	0.12778	1394	0	0.243862	0.740247
[RP3]var(co~)	0.2848811	0.031993	147	0	0.228133	0.353605
[RP2]var(co~)	1.021608	0.060789	19	0	0.894799	1.129942
[OD]bcons_1	1	0	0	0	1	1
No Measles-2						
Mean	Mean	Std. Dev.	ESS	P	[95% Cred.	Interval]
[FP1]cons	-0.3827019	0.149583	2693	0.005	-0.67167	-0.0835
[RP4]var(co~)	0.7443651	0.216115	1344	0	0.421868	1.257089
[RP3]var(co~)	0.2600061	0.02255	331	0	0.218736	0.307105
[RP2]var(co~)	1.132228	0.061645	29	0	1.019771	1.249906
[OD]bcons_1	1	0	0	0	1	1

Figure S3. Trace Plots – MCMC Diagnostics for all four outcomes (excluding singleton clusters)
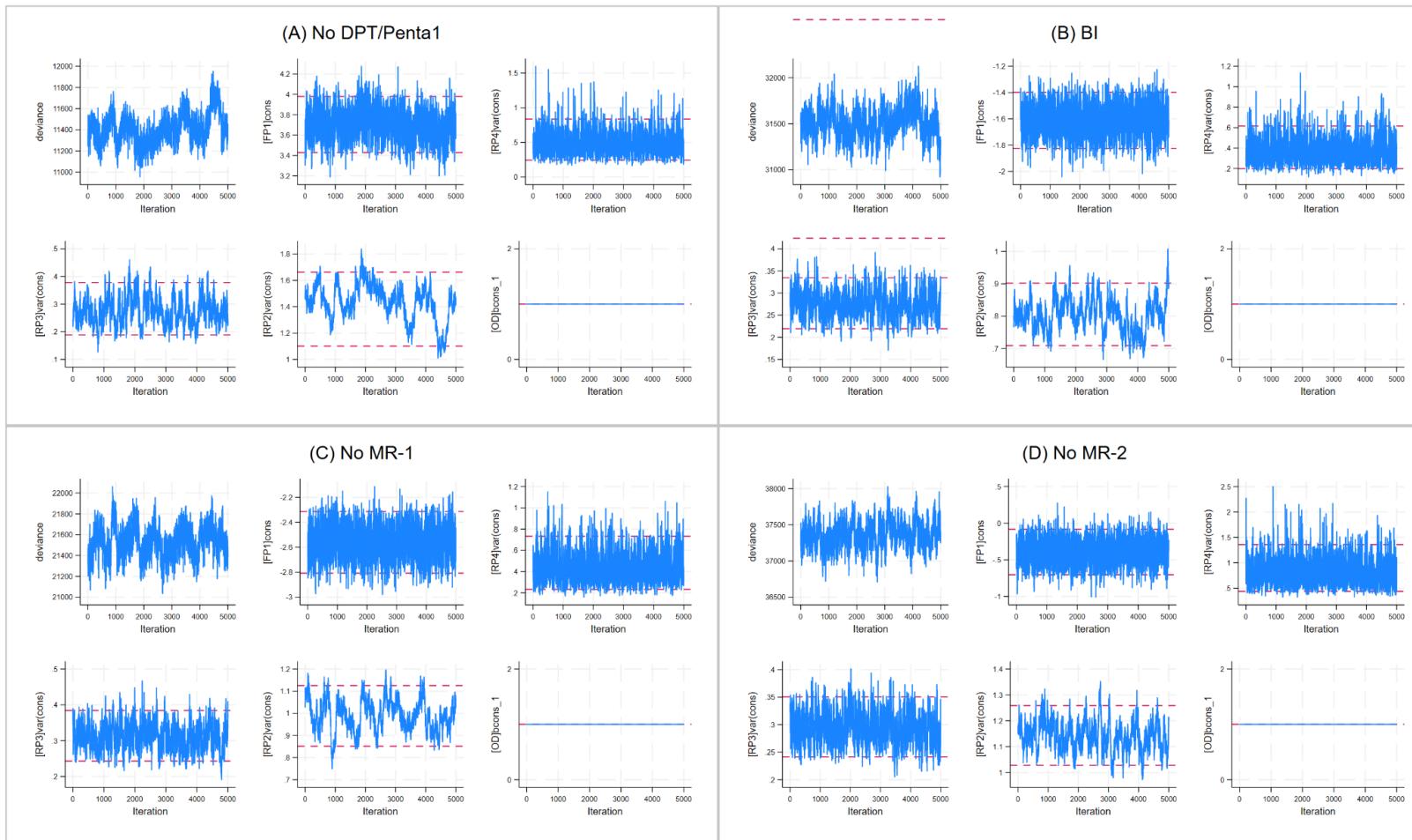
Table S2. MCMC Diagnostics Summary for all four outcomes (excluding singleton clusters).

No DPT/Penta-1						
Mean	Mean	Std. Dev.	ESS	P	[95% Cred.	Interval]
[FP1]cons	3.704111	0.141525	176	0.000	3.428798	3.979099
[RP4]var(co~)	0.4697016	0.154947	956	0.000	0.242076	0.834967
[RP3]var(co~)	0.2741438	0.049201	94	0.000	0.18864	0.377925
[RP2]var(co~)	1.433562	0.139228	16	0.000	1.10121	1.661781
[OD]bcons_1	1	0	0	0.000	1	1
BI						
Mean	Mean	Std. Dev.	ESS	P	[95% Cred.	Interval]
[FP1]cons	-1.608269	0.107751	2135	0.000	-1.82499	-1.39827
[RP4]var(co~)	0.3550574	0.108652	1067	0.000	0.198669	0.615803
[RP3]var(co~)	0.2743838	0.029689	215	0.000	0.219467	0.334626
[RP2]var(co~)	0.802935	0.050505	41	0.000	0.708981	0.90206
[OD]bcons_1	1	0	0	0.000	1	1
No MR-1						
Mean	Mean	Std. Dev.	ESS	P	[95% Cred.	Interval]
[FP1]cons	-2.558323	0.124609	1433	0.000	-2.80783	-2.31319
[RP4]var(co~)	0.4213399	0.128479	1089	0.000	0.232508	0.732506
[RP3]var(co~)	0.3102533	0.036892	186	0.000	0.242913	0.384294
[RP2]var(co~)	0.9894787	0.071019	38	0.000	0.85089	1.12535
[OD]bcons_1	1	0	0	0.000	1	1
No MR-2						
Mean	Mean	Std. Dev.	ESS	P	[95% Cred.	Interval]
[FP1]cons	-0.3865867	0.158326	2696	0.008	-0.70415	-0.08254
[RP4]var(co~)	0.7931527	0.238964	1337	0.000	0.437627	1.358197
[RP3]var(co~)	0.2933312	0.027921	296	0.000	0.241461	0.350466
[RP2]var(co~)	1.140801	0.057847	83	0.000	1.027814	1.258679
[OD]bcons_1	1	0	0	0.000	1	1

2. SUPPLEMENTARY RESULTS

Main analysis

Table S3. Geographic variance partitioning for four indicators of child under-vaccination, NFHS-5, India

Overall	ZD	BI	No MR-1	No MR-2
Variance Partitioning				
State	0.381 *(0.123)*	0.343 *(0.101)*	0.431 *(0.127)*	0.744 *(0.216)*
District	0.267 *(0.040)*	0.281 *(0.025)*	0.284 *(0.032)*	0.260 *(0.022)*
Cluster	1.355 *(0.127)*	0.801 *(0.054)*	1.022 *(0.061)*	1.132 *(0.062)*

Note: Standard errors in parentheses

"Zero-dose" - All surviving children aged 12–23 months who did not receive the first dose of diphtheria, tetanus, and pertussis -containing vaccine.

"BI " - All surviving children aged 12–23 months who did not receive 8 vaccine doses recommended in the first year of life: 1 dose of Bacillus Calmette-Guérin (BCG) vaccine, 3 doses of pentavalent vaccine, 3 doses of oral polio vaccine, 1 dose of measles-rubella vaccine.

"No MR-1" - All surviving children aged 12-23 months who did not receive the first dose of measles-rubella-containing vaccine.

"No MR-2" - All surviving children aged 24-35 months who did not receive the second dose of measles-rubella-containing vaccine.

Figure S4. Correlation plots for the district-level prevalence between the four indicators of child under-vaccination, NFHS-5, India

"ZD" - All surviving children aged 12–23 months who did not receive the first dose of diphtheria, tetanus, and pertussis -containing vaccine.

"BI" - Basic incomplete: All surviving children aged 12–23 months who did not receive 8 basic vaccine doses recommended in the first year of life: 1 dose of Bacillus Calmette-Guérin (BCG) vaccine, 3 doses of pentavalent vaccine, 3 doses of oral polio vaccine, 1 dose of measles-rubella vaccine.

"No MR-1" - All surviving children aged 12-23 months who did not receive the first dose of measles-rubella-containing vaccine.

"No MR-2" - All surviving children aged 24-35 months who did not receive the second dose of measles-rubella-containing vaccine.

Figure S5. Correlation plots for the cluster-level prevalence between the four indicators of child under-vaccination, NFHS-5, India (sample excluding singleton clusters)
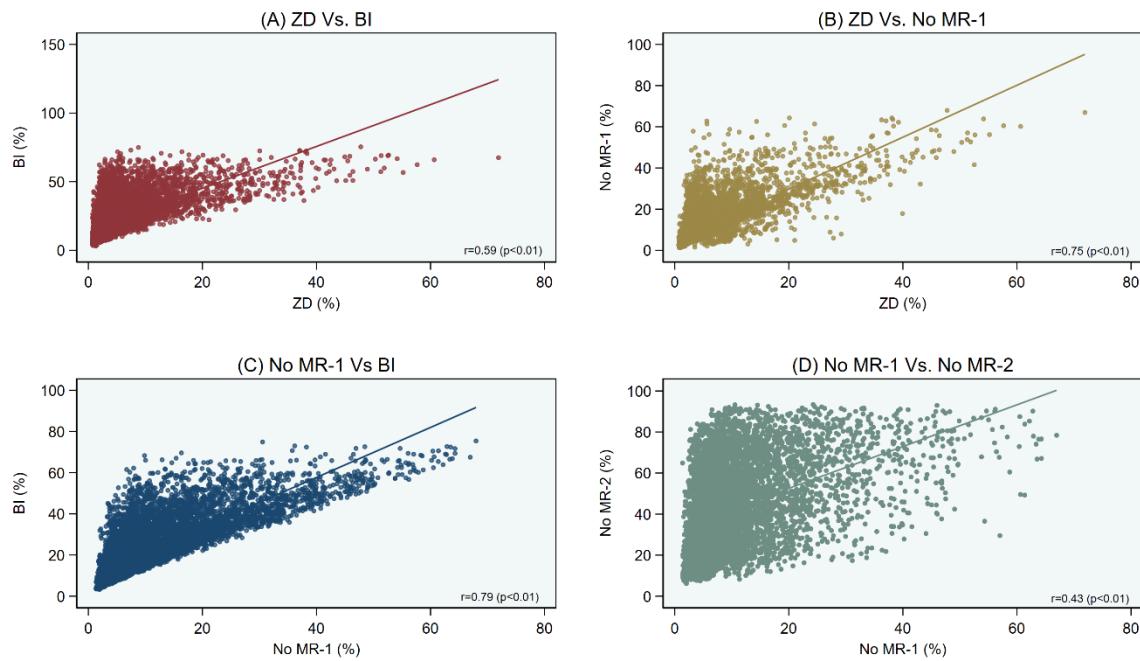
The analysis included n=**12216** clusters of size 2 or more

"ZD" - All surviving children aged 12–23 months who did not receive the first dose of diphtheria, tetanus, and pertussis -containing vaccine.
"BI" - Basic incomplete: All surviving children aged 12–23 months who did not receive 8 basic vaccine doses recommended in the first year of life: 1 dose of Bacillus Calmette-Guérin (BCG) vaccine, 3 doses of pentavalent vaccine, 3 doses of oral polio vaccine, 1 dose of measles-rubella vaccine.
"No MR-1" - All surviving children aged 12-23 months who did not receive the first dose of measles-rubella-containing vaccine.
"No MR-2" - All surviving children aged 24-35 months who did not receive the second dose of measles-rubella-containing vaccine.

Table S4. Prevalence of child under-vaccination across 707 districts, NFHS-5, India

DISTRICT	State	ZD		BI		No MR-1		No MR-2	
		Mean (%)	SD (%)	Mean (%)	SD (%)	Mean (%)	SD (%)	Mean (%)	SD (%)
KUPWARA	JAMMU & KASHMIR	1.86	0.60	6.24	1.54	2.70	0.59	14.59	7.59
BADGAM	JAMMU & KASHMIR	1.66	0.08	6.59	2.27	3.71	1.96	16.68	10.09
LEH(LADAKH)	LADAKH	1.63	0.70	10.67	4.22	7.49	4.36	37.53	15.16
KARGIL	LADAKH	1.29	0.06	10.61	4.81	3.72	0.72	13.71	4.81
PUNCH	JAMMU & KASHMIR	1.81	0.56	7.75	2.88	3.72	1.24	26.13	11.19
RAJOURI	JAMMU & KASHMIR	1.62	0.07	6.32	1.56	3.55	1.06	14.82	7.16
KATHUA	JAMMU & KASHMIR	1.87	0.09	5.37	0.32	3.07	0.13	23.81	10.58
BARAMULA	JAMMU & KASHMIR	4.28	3.44	18.26	7.35	9.56	4.91	37.13	14.25
BANDIPORE	JAMMU & KASHMIR	4.19	3.30	8.76	3.10	4.92	2.62	38.25	11.76
SRINAGAR	JAMMU & KASHMIR	2.57	0.98	7.81	1.69	3.85	0.97	14.57	4.98
GANDERBAL	JAMMU & KASHMIR	3.18	1.85	13.62	4.55	4.13	1.38	23.43	11.25
PULWAMA	JAMMU & KASHMIR	2.28	0.80	8.95	2.53	3.46	0.77	18.17	6.83
SHUPIYAN	JAMMU & KASHMIR	1.77	0.10	7.84	2.17	2.82	0.11	11.63	4.54
ANANTNAG	JAMMU & KASHMIR	3.72	2.09	11.36	3.23	5.10	2.06	30.76	14.09
KULGAM	JAMMU & KASHMIR	1.66	0.06	4.95	0.81	2.54	0.10	15.86	8.53
DODA	JAMMU & KASHMIR	9.40	7.30	24.92	9.89	17.34	9.75	32.24	14.90
RAMBAN	JAMMU & KASHMIR	3.50	2.78	16.03	7.39	10.76	6.89	44.12	15.28
KISHTWAR	JAMMU & KASHMIR	3.21	1.64	8.58	2.46	4.71	1.54	26.64	13.82
UDHAMPUR	JAMMU & KASHMIR	4.34	2.95	11.10	5.16	7.51	5.01	21.91	11.20
REASI	JAMMU & KASHMIR	4.09	4.16	13.65	6.43	7.10	4.75	25.35	12.23
JAMMU	JAMMU & KASHMIR	2.85	1.55	11.84	3.45	5.49	2.09	25.82	11.45
SAMBA	JAMMU & KASHMIR	2.46	0.97	7.89	2.41	4.18	1.40	20.87	10.67
CHAMBA	HIMACHAL PRADESH	0.88	0.04	4.20	0.25	1.90	0.07	25.76	12.48
KANGRA	HIMACHAL PRADESH	1.15	0.42	11.16	3.15	2.88	0.81	44.97	13.59
LAHUL & SPITI	HIMACHAL PRADESH	1.18	0.50	15.23	4.47	3.55	1.37	28.46	10.57
KULLU	HIMACHAL PRADESH	1.87	2.02	12.67	4.75	3.93	2.51	37.02	10.05
MANDI	HIMACHAL PRADESH	0.90	0.04	6.31	1.48	1.81	0.07	15.64	5.82
HAMIRPUR	HIMACHAL PRADESH	2.14	1.25	13.39	4.60	4.91	1.98	36.29	12.20
UNA	HIMACHAL PRADESH	0.88	0.03	15.72	5.22	4.48	1.95	44.71	13.79
BILASPUR	HIMACHAL PRADESH	0.88	0.03	4.12	0.13	1.89	0.07	18.77	7.05
SOLAN	HIMACHAL PRADESH	1.26	0.55	7.56	2.05	3.21	1.12	13.06	4.64
SIRMAUR	HIMACHAL PRADESH	0.82	0.04	6.47	1.94	1.68	0.07	24.29	9.26
SHIMLA	HIMACHAL PRADESH	0.90	0.04	5.67	1.14	2.80	0.87	18.73	10.67
KINNAUR	HIMACHAL PRADESH	0.91	0.03	7.19	1.98	2.44	0.60	25.19	10.23

KAPURTHALA	PUNJAB	3.17	1.45	27.48	8.56	7.33	2.49	41.45	14.65
JALANDHAR	PUNJAB	2.32	0.74	11.04	2.44	4.30	0.81	41.50	12.96
HOSHIARPUR	PUNJAB	1.84	0.07	10.64	2.79	5.60	1.76	32.98	10.20
SHAHID BHAGAT SINGH NAGAR	PUNJAB	1.89	0.10	6.96	0.42	3.82	0.23	26.19	8.40
FATEHGARH SAHIB	PUNJAB	3.50	2.00	16.20	5.51	7.54	2.94	30.09	10.56
LUDHIANA	PUNJAB	6.31	4.17	24.19	6.67	14.53	5.47	46.38	13.53
MOGA	PUNJAB	3.03	1.55	18.82	6.51	9.87	4.16	52.41	14.64
MUKTSAR	PUNJAB	4.71	2.46	35.70	10.42	13.97	5.99	48.37	14.33
FARIDKOT	PUNJAB	2.20	0.79	25.40	8.42	9.85	3.89	46.70	13.08
BATHINDA	PUNJAB	3.35	1.87	31.67	8.10	11.34	4.18	52.67	13.55
MANSA	PUNJAB	2.16	0.75	15.96	7.84	6.97	5.29	36.17	12.43
PATIALA	PUNJAB	2.78	1.27	19.94	6.51	8.12	4.27	43.73	12.61
AMRITSAR	PUNJAB	2.88	1.41	28.50	8.25	8.18	2.89	40.56	14.83
TARN TARAN	PUNJAB	2.74	1.26	17.40	5.37	8.51	3.48	29.74	11.89
RUPNAGAR	PUNJAB	5.69	3.13	17.91	6.33	8.48	4.52	33.37	11.31
SAHIBZADA AJIT SINGH NAGAR	PUNJAB	4.23	2.62	23.78	7.63	13.27	6.30	25.86	10.99
SANGRUR	PUNJAB	2.37	0.94	12.09	3.01	5.33	1.47	42.96	12.88
BARNALA	PUNJAB	2.70	1.23	30.49	9.66	10.60	3.91	43.11	10.61
CHANDIGARH	CHANDIGARH	3.76	1.96	17.85	5.21	9.37	3.62	22.67	8.80
UTTARKASHI	UTTARAKHAND	2.36	1.18	13.60	5.17	3.05	0.93	21.67	8.86
CHAMOLI	UTTARAKHAND	1.39	0.06	12.83	4.65	5.44	2.67	29.90	10.67
RUDRAPRAYAG	UTTARAKHAND	2.81	2.54	9.27	3.34	4.18	2.47	24.97	9.82
TEHRI GARHWAL	UTTARAKHAND	1.41	0.07	14.29	4.33	2.85	0.62	20.83	9.14
DEHRADUN	UTTARAKHAND	3.87	2.34	20.49	6.48	9.02	3.78	21.87	8.43
GARHWAL	UTTARAKHAND	3.93	3.06	17.09	5.46	5.15	2.82	29.84	10.96
PITHORAGARH	UTTARAKHAND	1.43	0.06	6.75	1.55	2.41	0.08	25.51	9.64
BAGESHWAR	UTTARAKHAND	2.32	1.13	11.07	3.18	4.26	1.49	47.85	13.36
ALMORA	UTTARAKHAND	2.73	1.43	11.72	4.50	3.75	1.13	24.50	8.92
CHAMPAWAT	UTTARAKHAND	1.32	0.05	7.76	2.80	2.69	0.57	20.43	7.36
NAINITAL	UTTARAKHAND	2.18	1.05	20.81	9.61	9.43	6.77	23.84	8.86
UDHAM SINGH NAGAR	UTTARAKHAND	2.74	1.39	12.33	4.15	5.77	2.16	22.65	10.50
HARDWAR	UTTARAKHAND	2.74	1.46	16.13	6.10	6.51	3.56	27.96	11.51
PANCHKULA	HARYANA	2.77	1.06	11.46	4.17	4.50	1.09	25.63	8.43
AMBALA	HARYANA	3.36	1.84	18.92	7.17	4.92	3.05	46.72	13.09
YAMUNANAGAR	HARYANA	4.19	3.50	16.08	6.38	4.99	2.78	40.66	14.70
KURUKSHETRA	HARYANA	2.23	0.94	24.58	8.30	4.81	1.75	38.42	12.29

KAITHAL	HARYANA	4.43	2.35	20.14	6.59	6.36	2.33	25.67	9.33
KARNAL	HARYANA	1.72	0.09	11.23	3.01	3.23	0.73	24.85	9.50
PANIPAT	HARYANA	2.83	1.41	18.35	5.99	7.43	3.11	37.88	10.94
SONIPAT	HARYANA	4.74	2.62	15.31	5.00	8.06	3.00	55.45	14.12
JIND	HARYANA	3.52	1.86	19.70	5.77	9.75	3.92	45.08	14.43
FATEHABAD	HARYANA	3.94	2.18	10.72	3.07	5.57	2.15	23.20	9.85
SIRSA	HARYANA	2.39	0.12	11.95	3.02	5.33	1.84	40.69	9.34
HISAR	HARYANA	2.22	0.77	14.40	5.69	4.30	1.30	34.04	13.22
ROHTAK	HARYANA	5.92	5.87	18.61	6.89	11.58	5.56	44.31	13.09
JHAJJAR	HARYANA	2.40	0.98	11.27	2.80	4.29	1.24	40.63	11.09
MAHENDRAGARH	HARYANA	2.99	1.27	20.69	5.40	8.13	3.17	52.48	13.51
REWARI	HARYANA	4.14	3.18	17.85	7.50	6.79	3.58	46.43	13.97
GURGAON	HARYANA	5.87	3.26	34.54	12.03	11.98	6.51	35.83	14.47
MEWAT	HARYANA	11.19	7.09	41.84	11.57	27.86	12.24	67.67	12.68
FARIDABAD	HARYANA	4.00	2.83	27.73	9.68	11.91	7.85	48.79	13.85
PALWAL	HARYANA	5.71	3.08	27.55	8.72	9.92	4.32	57.68	15.25
GANGANAGAR	RAJASTHAN	2.21	0.91	10.19	4.05	4.16	1.34	49.29	15.14
HANUMANGARH	RAJASTHAN	3.11	1.91	15.23	5.63	5.21	2.28	57.51	15.51
BIKANER	RAJASTHAN	6.42	3.68	22.49	7.84	11.68	5.59	59.40	13.88
CHURU	RAJASTHAN	3.79	4.06	22.25	8.60	8.25	5.57	50.80	15.99
JHUNJHUNUN	RAJASTHAN	1.47	0.08	11.77	3.72	5.10	2.02	51.00	16.14
ALWAR	RAJASTHAN	6.15	5.03	30.81	9.92	12.67	7.64	59.66	13.65
BHARATPUR	RAJASTHAN	3.76	3.20	29.95	10.35	11.54	6.81	68.95	10.92
DHAULPUR	RAJASTHAN	1.31	0.07	12.36	5.10	3.32	1.14	50.27	14.73
KARAULI	RAJASTHAN	2.15	0.91	10.75	3.02	4.03	1.25	56.11	15.61
SAWAI MADHOPUR	RAJASTHAN	4.56	3.32	36.32	8.98	15.23	7.03	43.81	13.80
DAUSA	RAJASTHAN	1.72	0.63	8.15	2.41	3.77	1.19	48.73	13.78
JAIPUR	RAJASTHAN	2.13	0.89	10.41	3.40	2.95	0.69	44.01	13.67
SIKAR	RAJASTHAN	3.39	1.70	25.49	8.22	8.81	2.99	47.10	16.20
NAGAUR	RAJASTHAN	2.71	1.39	16.71	4.28	5.79	2.26	41.30	12.91
JODHPUR	RAJASTHAN	3.86	1.92	15.66	6.59	7.56	4.41	43.27	16.49
JAISALMER	RAJASTHAN	7.63	6.79	22.40	9.83	12.73	8.59	43.22	17.63
BARMER	RAJASTHAN	3.53	2.13	8.27	2.95	5.60	2.87	38.66	17.51
JALOR	RAJASTHAN	4.40	2.60	20.15	9.57	8.78	4.34	48.73	16.74
SIROHI	RAJASTHAN	3.38	2.45	12.28	3.72	4.99	2.33	59.20	13.91
PALI	RAJASTHAN	1.78	0.56	9.28	2.81	3.59	1.11	24.42	8.22
AJMER	RAJASTHAN	1.90	0.67	17.86	5.89	5.15	1.97	62.28	13.39

TONK	RAJASTHAN	2.46	1.14	18.98	5.99	7.08	2.90	45.18	12.39
BUNDI	RAJASTHAN	1.71	0.55	18.40	6.49	5.99	2.07	37.41	13.80
BHILWARA	RAJASTHAN	3.07	1.80	11.78	3.16	6.88	2.35	62.16	13.44
RAJSAMAND	RAJASTHAN	4.84	2.74	23.16	7.88	8.79	3.37	57.70	15.34
DUNGARPUR	RAJASTHAN	1.93	0.69	14.71	3.50	3.77	1.04	47.12	13.68
BANSWARA	RAJASTHAN	2.07	0.84	14.48	4.71	5.02	1.82	41.81	14.39
CHITTAURGARH	RAJASTHAN	1.94	0.79	11.83	3.30	3.78	1.20	40.47	13.48
KOTA	RAJASTHAN	1.81	0.61	11.38	3.96	4.30	2.21	44.38	13.44
BARAN	RAJASTHAN	1.93	0.85	9.32	4.20	3.55	1.70	33.61	13.87
JHALAWAR	RAJASTHAN	1.67	0.41	15.14	4.80	6.36	2.30	29.30	13.10
UDAIPUR	RAJASTHAN	2.80	1.37	12.28	3.95	6.08	2.43	38.36	14.62
PRATAPGARH	RAJASTHAN	1.50	0.08	20.28	7.07	5.79	2.16	60.83	16.03
SAHARANPUR	UTTAR PRADESH	3.67	2.90	11.25	3.76	5.79	2.81	19.14	9.22
BIJNOR	UTTAR PRADESH	3.74	2.37	11.04	3.31	7.21	3.34	17.68	7.34
RAMPUR	UTTAR PRADESH	3.31	2.13	19.05	5.91	7.17	2.97	41.78	13.11
JYOTIBA PHULE NAGAR	UTTAR PRADESH	6.74	4.79	25.04	8.61	12.97	6.89	30.39	11.71
MEERUT	UTTAR PRADESH	3.72	2.18	16.78	4.28	6.91	2.27	21.65	10.56
BAGHPAT	UTTAR PRADESH	5.65	4.29	16.94	6.00	10.76	4.92	36.80	13.22
GAUTAM BUDDHA NAGAR	UTTAR PRADESH	5.86	3.16	28.14	7.69	10.82	4.26	31.97	12.84
BULANDSHAHR	UTTAR PRADESH	6.94	4.34	29.64	8.57	17.41	7.32	30.38	11.75
ALIGARH	UTTAR PRADESH	5.77	3.11	26.69	6.56	13.57	5.49	28.91	10.49
MAHAMAYA NAGAR	UTTAR PRADESH	4.64	2.38	26.41	8.87	10.09	3.63	53.44	12.01
MATHURA	UTTAR PRADESH	3.48	2.01	24.54	7.97	8.02	2.97	44.28	14.12
AGRA	UTTAR PRADESH	2.38	0.58	20.61	10.07	5.14	1.73	30.57	13.73
FIROZABAD	UTTAR PRADESH	4.18	2.05	30.15	8.45	15.74	6.32	51.63	14.14
MAINPURI	UTTAR PRADESH	3.74	1.80	23.30	6.88	9.09	3.60	41.68	11.98
BAREILLY	UTTAR PRADESH	5.21	4.43	25.99	8.88	10.00	5.05	32.38	10.46
PILIBHIT	UTTAR PRADESH	3.33	1.17	10.68	2.82	5.99	1.58	30.87	11.24
SHAHJAHANPUR	UTTAR PRADESH	4.81	3.30	21.73	6.37	9.23	3.75	25.61	9.28
KHERI	UTTAR PRADESH	11.26	6.51	28.18	9.95	17.95	8.66	36.02	13.87
SITAPUR	UTTAR PRADESH	5.09	3.52	31.33	10.22	16.05	8.15	38.12	15.03
HARDOI	UTTAR PRADESH	6.55	6.83	32.89	10.79	15.60	7.68	45.84	10.80
UNNAO	UTTAR PRADESH	8.01	4.77	35.42	9.69	16.34	7.61	47.98	13.73
LUCKNOW	UTTAR PRADESH	7.53	3.91	28.33	7.61	17.15	6.28	30.56	10.01
FARRUKHABAD	UTTAR PRADESH	4.37	2.24	30.38	11.11	11.56	7.32	45.42	14.18
KANNAUJ	UTTAR PRADESH	5.70	2.42	38.27	10.42	12.91	5.54	60.05	14.06

ETAWAH	UTTAR PRADESH	3.01	1.35	19.39	6.32	7.03	2.39	33.09	12.87
AURAIYA	UTTAR PRADESH	4.64	2.54	18.12	5.81	9.63	4.08	50.10	14.12
KANPUR DEHAT	UTTAR PRADESH	13.44	7.99	39.82	10.97	20.72	9.80	60.23	13.96
KANPUR NAGAR	UTTAR PRADESH	8.08	4.06	26.33	6.75	16.53	5.68	42.01	13.82
JALAUN	UTTAR PRADESH	8.55	5.37	32.29	8.37	17.25	7.45	41.97	12.33
JHANSI	UTTAR PRADESH	8.23	7.19	48.73	10.59	18.80	8.65	51.16	14.80
LALITPUR	UTTAR PRADESH	6.49	3.33	27.21	7.90	14.32	5.33	53.96	13.43
HAMIRPUR	UTTAR PRADESH	3.59	1.47	20.99	5.17	7.20	2.78	49.30	12.90
MAHOBA	UTTAR PRADESH	8.78	5.47	25.18	7.31	17.00	7.14	44.26	13.54
BANDA	UTTAR PRADESH	5.87	3.83	34.02	10.23	15.91	6.97	53.02	11.55
CHITRAKOOT	UTTAR PRADESH	9.69	5.77	32.47	8.80	14.84	6.06	54.73	13.72
FATEHPUR	UTTAR PRADESH	7.60	4.77	38.08	10.65	20.06	9.72	38.33	15.09
PRATAPGARH	UTTAR PRADESH	5.92	3.71	23.59	6.50	10.38	4.58	38.86	14.74
KAUSHAMBI	UTTAR PRADESH	8.46	5.30	32.53	9.35	17.61	8.61	42.99	13.42
ALLAHABAD	UTTAR PRADESH	7.47	4.04	36.39	10.76	20.59	9.23	49.37	14.22
BARA BANKI	UTTAR PRADESH	5.85	3.90	31.93	8.55	17.08	7.31	35.06	11.26
FAIZABAD	UTTAR PRADESH	7.15	3.60	29.88	7.25	14.21	5.00	53.82	15.08
AMBEDKAR NAGAR	UTTAR PRADESH	6.50	5.39	22.54	7.52	13.09	6.42	36.27	11.64
BAHRAICH	UTTAR PRADESH	10.53	7.63	46.44	12.36	25.28	12.21	60.34	14.30
SHRAWASTI	UTTAR PRADESH	5.45	3.30	38.06	10.11	18.03	7.41	44.37	15.82
BALRAMPUR	UTTAR PRADESH	12.77	8.26	39.07	9.71	20.51	9.09	49.01	13.06
GONDA	UTTAR PRADESH	7.30	4.97	37.04	11.55	23.04	9.69	48.06	14.42
SIDDHARTHNAGAR	UTTAR PRADESH	5.57	3.38	33.04	9.12	11.27	4.76	31.18	12.41
BASTI	UTTAR PRADESH	7.28	3.92	23.66	6.90	12.03	4.17	45.35	14.40
SANT KABIR NAGAR	UTTAR PRADESH	4.62	4.68	21.06	10.13	5.73	4.00	36.50	14.39
MAHRAJGANJ	UTTAR PRADESH	2.42	0.71	22.18	7.83	7.71	4.04	39.12	11.39
GORAKHPUR	UTTAR PRADESH	2.90	1.15	28.97	8.49	11.94	5.76	43.46	14.92
KUSHINAGAR	UTTAR PRADESH	4.94	3.25	30.73	8.62	9.87	5.06	40.18	13.44
DEORIA	UTTAR PRADESH	7.61	6.46	31.19	8.81	16.01	8.41	48.59	14.49
AZAMGARH	UTTAR PRADESH	7.30	6.48	33.03	9.71	15.45	8.87	50.08	13.29
MAU	UTTAR PRADESH	5.90	2.91	37.33	11.24	18.79	8.46	49.91	13.42
BALLIA	UTTAR PRADESH	6.04	4.63	32.90	9.49	13.50	6.84	47.27	13.25
JAUNPUR	UTTAR PRADESH	5.23	4.83	23.40	7.14	14.35	7.02	41.65	13.86
GHAZIPUR	UTTAR PRADESH	5.68	4.54	33.58	10.90	17.16	7.89	42.95	13.44
CHANDAULI	UTTAR PRADESH	7.16	3.71	23.96	6.64	13.80	5.15	49.03	12.12
VARANASI	UTTAR PRADESH	4.52	2.28	19.55	4.61	8.77	3.28	50.10	13.97

SANT RAVIDAS NAGAR (BHADOHI)	UTTAR PRADESH	8.97	5.33	34.25	9.49	16.85	8.53	58.26	15.03
MIRZAPUR	UTTAR PRADESH	7.68	4.78	31.09	8.83	15.91	6.04	34.85	13.62
SONBHADRA	UTTAR PRADESH	4.22	2.07	26.09	8.44	15.55	7.56	41.47	12.68
ETAH	UTTAR PRADESH	5.76	3.02	40.73	10.02	10.20	5.06	54.00	12.60
KANSHIRAM NAGAR	UTTAR PRADESH	4.79	3.00	29.51	9.66	10.60	4.80	42.13	12.28
PASHCHIM CHAMPARAN	BIHAR	6.46	5.05	32.75	9.18	15.16	7.53	47.14	12.17
PURBA CHAMPARAN	BIHAR	6.46	4.99	29.65	9.20	18.57	8.33	47.29	13.75
SHEOHAR	BIHAR	4.26	2.31	31.99	9.93	13.68	5.18	45.46	13.63
SITAMARHI	BIHAR	6.33	4.41	29.10	9.13	17.28	7.34	43.59	14.59
MADHUBANI	BIHAR	2.94	1.37	23.15	6.27	7.23	3.03	36.03	10.81
SUPAUL	BIHAR	4.44	3.84	24.60	8.69	11.52	5.74	36.96	12.97
ARARIA	BIHAR	6.03	6.54	34.13	11.80	13.56	8.74	50.55	14.32
KISHANGANJ	BIHAR	5.61	3.56	30.59	10.07	14.21	6.47	53.03	12.84
PURNIA	BIHAR	6.38	5.57	33.74	10.09	15.05	6.65	58.70	14.04
KATIHAR	BIHAR	4.53	3.63	23.78	7.61	12.46	5.72	51.53	14.86
MADHEPURA	BIHAR	3.60	2.39	22.45	6.88	9.82	4.47	47.04	13.51
SAHARSA	BIHAR	3.48	2.25	25.86	9.11	10.66	5.19	42.00	13.28
DARBHANGA	BIHAR	5.97	3.52	30.08	7.85	14.09	6.09	38.27	12.87
MUZAFFARPUR	BIHAR	2.16	0.93	21.63	7.69	6.75	2.65	35.97	12.43
GOPALGANJ	BIHAR	2.61	1.28	20.74	7.28	6.90	2.66	31.80	11.52
SIWAN	BIHAR	2.87	1.55	21.88	8.02	10.71	5.51	31.55	11.68
SARAN	BIHAR	2.95	1.46	26.57	8.81	9.79	3.61	56.33	14.84
VAISHALI	BIHAR	2.70	1.32	25.78	7.57	13.85	6.17	70.76	10.48
SAMASTIPUR	BIHAR	1.72	0.57	24.46	7.37	8.34	3.82	40.12	13.07
BEGUSARAI	BIHAR	3.56	2.00	32.06	10.67	14.96	6.36	54.38	17.56
KHAGARIA	BIHAR	2.76	1.80	32.83	9.21	13.32	6.04	48.85	12.66
BHAGALPUR	BIHAR	2.72	1.38	26.31	9.84	7.62	4.05	30.32	12.85
BANKA	BIHAR	3.30	1.66	12.70	3.49	5.31	1.69	29.86	12.87
MUNGER	BIHAR	5.73	3.39	23.81	7.81	11.06	5.43	31.74	12.57
LAKHISARAI	BIHAR	4.32	2.20	28.85	10.05	13.30	6.47	41.86	13.76
SHEIKHPURA	BIHAR	2.24	0.94	17.20	6.02	9.22	4.44	42.34	14.69
NALANDA	BIHAR	3.74	2.48	21.28	8.10	11.69	7.34	39.60	13.30
PATNA	BIHAR	2.96	1.39	38.47	10.25	15.59	7.31	60.76	12.45
BHOJPUR	BIHAR	3.73	2.05	28.73	10.07	9.56	3.50	51.68	12.64
BUXAR	BIHAR	2.46	1.04	25.17	8.55	8.56	3.34	34.86	13.62

KAIMUR (BHABUA)	BIHAR	2.78	1.30	12.25	3.91	6.26	2.65	24.92	11.86
ROHTAS	BIHAR	2.19	1.91	12.75	4.62	4.17	2.03	27.20	9.42
AURANGABAD	BIHAR	1.36	0.07	11.65	3.89	4.15	1.73	22.26	9.56
GAYA	BIHAR	1.98	0.68	14.76	6.59	6.23	3.32	30.42	12.45
NAWADA	BIHAR	3.67	1.93	21.49	7.37	8.76	4.74	39.43	12.14
JAMUI	BIHAR	3.67	2.55	27.87	9.23	11.56	5.04	39.23	15.32
JEHANABAD	BIHAR	2.07	0.79	26.56	8.66	4.35	1.50	41.56	12.20
ARWAL	BIHAR	2.66	1.19	15.22	4.37	5.35	1.89	28.84	12.12
NORTH DISTRICT	SIKKIM	1.78	0.08	8.46	2.32	4.33	1.33	59.12	11.64
WEST DISTRICT	SIKKIM	2.19	0.66	7.40	2.05	3.92	0.76	32.48	9.78
SOUTH DISTRICT	SIKKIM	4.14	2.23	12.37	3.59	8.58	3.44	50.01	11.95
EAST DISTRICT	SIKKIM	2.51	1.12	19.42	6.63	7.30	4.45	67.09	10.73
TAWANG	ARUNACHAL PRADESH	5.30	2.31	31.60	8.23	9.35	3.18	54.35	13.57
WEST KAMENG	ARUNACHAL PRADESH	11.28	7.13	35.82	9.62	23.10	9.23	75.88	8.13
EAST KAMENG	ARUNACHAL PRADESH	11.70	8.59	36.60	11.86	18.99	10.52	58.59	14.55
PAPUM PARE	ARUNACHAL PRADESH	8.31	5.25	34.18	9.44	13.81	5.83	51.05	12.68
UPPER SUBANSIRI	ARUNACHAL PRADESH	9.21	5.83	30.49	9.97	12.59	5.52	50.41	14.12
UPPER SIANG	ARUNACHAL PRADESH	8.41	4.57	33.86	7.58	21.22	7.27	51.72	16.22
CHANGLANG	ARUNACHAL PRADESH	9.47	7.31	24.48	7.88	12.35	6.81	39.04	11.54
LOWER SUBANSIRI	ARUNACHAL PRADESH	6.73	5.46	28.41	7.37	15.99	7.07	32.17	11.72
DIBANG VALLEY	ARUNACHAL PRADESH	4.55	1.61	14.66	2.75	9.39	2.56	35.41	10.68
LOWER DIBANG VALLEY	ARUNACHAL PRADESH	3.73	1.37	21.35	5.51	10.83	4.30	31.04	10.40
ANJAW	ARUNACHAL PRADESH	4.13	1.58	11.39	2.40	6.14	1.57	34.67	9.30
MON	NAGALAND	6.20	2.86	36.98	8.47	15.94	5.87	49.20	14.98
MOKOKCHUNG	NAGALAND	4.47	0.21	17.54	3.21	7.95	0.34	46.13	10.48
ZUNHEBOTO	NAGALAND	12.93	7.31	43.87	10.92	22.82	8.24	51.77	15.36
WOKHA	NAGALAND	15.05	8.55	50.73	10.10	26.91	9.33	59.93	12.60
DIMAPUR	NAGALAND	12.90	8.16	45.64	11.01	24.67	9.63	72.81	9.96
PHEK	NAGALAND	7.20	3.05	40.95	10.41	21.66	9.13	52.20	13.07
TUENSANG	NAGALAND	22.16	13.54	57.37	12.32	42.79	15.57	69.42	11.92
LONGLENG	NAGALAND	14.79	12.01	45.32	12.15	24.12	10.84	55.15	13.63

KIPHIRE	NAGALAND	13.88	8.70	54.73	10.58	29.64	10.51	76.83	9.31
KOHIMA	NAGALAND	5.35	1.95	24.97	6.38	13.63	4.86	47.69	13.16
PEREN	NAGALAND	9.21	4.63	35.85	9.69	19.67	8.01	70.22	11.36
SENAPATI	MANIPUR	6.74	5.20	33.54	10.63	21.19	9.83	81.91	9.29
TAMENGLONG	MANIPUR	7.58	4.18	34.98	10.77	24.11	9.94	85.92	6.41
CHURACHANDPUR	MANIPUR	10.60	7.51	37.26	10.93	28.13	11.92	73.81	12.67
BISHNUPUR	MANIPUR	5.48	2.70	31.56	10.90	24.86	11.70	80.78	7.16
THOUBAL	MANIPUR	3.79	2.71	24.43	7.24	19.19	7.42	70.18	11.92
IMPHAL WEST	MANIPUR	3.78	1.79	25.92	7.07	11.86	4.25	81.86	7.29
IMPHAL EAST	MANIPUR	3.51	1.61	25.47	8.54	17.78	7.88	72.76	9.86
UKHRUL	MANIPUR	9.36	6.48	51.76	11.91	38.73	13.96	84.42	9.11
CHANDEL	MANIPUR	4.05	1.96	40.88	10.40	32.15	11.11	80.87	9.29
MAMIT	MIZORAM	2.96	0.17	13.78	5.83	6.51	3.11	54.25	15.49
KOLASIB	MIZORAM	6.20	2.71	17.70	5.20	12.84	4.96	40.36	13.85
AIZAWL	MIZORAM	10.14	5.94	26.47	9.70	17.16	9.56	52.05	11.44
CHAMPHAI	MIZORAM	5.07	2.33	14.97	5.44	8.36	3.08	35.22	12.48
SERCHHIP	MIZORAM	7.62	5.03	14.96	5.75	11.83	6.33	58.70	16.30
LUNGLEI	MIZORAM	7.77	4.25	22.41	6.24	12.04	4.95	56.58	13.31
LAWNGTLAI	MIZORAM	14.39	12.92	25.38	10.76	17.52	11.60	55.99	14.55
SAIHA	MIZORAM	21.77	12.53	34.11	11.03	28.17	11.16	61.49	13.63
DHALAI	TRIPURA	3.35	1.87	24.26	8.71	7.74	3.18	49.84	14.54
SOUTH GARO HILLS	MEGHALAYA	3.56	0.26	16.00	5.14	11.44	4.52	77.45	9.57
RIBHOI	MEGHALAYA	8.86	5.40	23.60	8.18	18.70	9.00	84.83	7.56
EAST KHASI HILLS	MEGHALAYA	17.05	7.47	44.37	8.22	36.21	9.65	77.15	10.05
KOKRAJHAR	ASSAM	7.36	3.72	45.03	9.56	16.10	6.16	73.58	9.99
GOALPARA	ASSAM	4.14	1.81	28.84	9.06	8.63	3.51	63.84	13.84
BARPETA	ASSAM	4.49	3.16	43.00	11.71	13.47	7.09	75.24	11.83
MORIGAON	ASSAM	6.45	4.65	26.20	8.44	11.36	5.44	72.55	12.71
LAKHIMPUR	ASSAM	4.39	2.05	28.93	7.10	11.56	4.12	48.32	13.10
DHEMAJI	ASSAM	3.66	1.73	12.86	3.79	7.27	2.65	68.11	14.09
TINSUKIA	ASSAM	2.90	0.13	24.48	6.38	7.38	2.46	59.15	13.71
DIBRUGARH	ASSAM	3.55	1.10	16.49	3.48	5.75	1.28	48.89	15.91
GOLAGHAT	ASSAM	5.91	2.82	25.41	6.27	10.40	3.52	55.13	15.68
DIMA HASAO	ASSAM	8.89	4.42	34.64	9.95	22.02	9.48	65.96	13.46
CACHAR	ASSAM	8.24	5.09	27.07	8.50	17.89	7.70	76.33	9.21
KARIMGANJ	ASSAM	5.44	2.40	24.52	8.45	12.33	4.46	76.50	10.59
HAILAKANDI	ASSAM	7.45	3.70	28.71	8.21	12.04	4.71	68.55	12.25

BONGAIGAON	ASSAM	8.73	5.98	29.63	10.27	12.05	5.67	66.88	13.70
CHIRANG	ASSAM	5.95	4.67	26.31	7.76	8.81	3.45	69.61	15.95
KAMRUP	ASSAM	5.84	3.76	32.43	8.73	14.21	7.82	72.16	11.40
KAMRUP METROPOLITAN	ASSAM	5.50	3.08	41.85	9.00	19.41	6.47	67.23	11.33
NALBARI	ASSAM	5.67	3.25	31.51	8.32	11.52	4.49	66.00	10.86
BAKSA	ASSAM	4.87	3.83	27.50	9.26	8.05	4.14	54.84	14.37
DARRANG	ASSAM	6.51	6.61	39.84	10.33	14.52	6.09	73.66	10.55
UDALGURI	ASSAM	9.56	6.82	53.99	8.53	17.22	7.38	55.53	12.71
DARJILING	WEST BENGAL	0.84	0.04	6.57	1.93	2.07	0.08	25.55	9.35
JALPAIGURI	WEST BENGAL	0.83	0.03	9.56	4.01	3.02	0.96	16.57	5.97
KOCH BIHAR	WEST BENGAL	1.41	0.78	6.67	2.03	2.94	1.11	23.65	10.27
UTTAR DINAJPUR	WEST BENGAL	1.48	0.72	11.78	5.08	6.44	3.38	19.20	8.74
DAKSHIN DINAJPUR	WEST BENGAL	0.82	0.03	6.93	2.65	2.87	1.66	14.32	5.84
MALDAH	WEST BENGAL	1.06	0.45	10.20	3.29	3.95	1.64	26.93	16.12
MURSHIDABAD	WEST BENGAL	1.01	0.48	9.09	2.67	3.15	1.08	38.12	13.88
BIRBHUM	WEST BENGAL	1.08	0.42	14.64	6.49	2.36	0.67	22.41	7.61
NADIA	WEST BENGAL	0.89	0.03	8.81	2.52	3.55	1.25	20.78	8.25
NORTH TWENTY FOUR PARGANAS	WEST BENGAL	1.15	0.44	7.00	1.70	3.30	1.02	13.20	4.63
HUGLI	WEST BENGAL	0.87	0.03	5.88	1.32	2.64	0.71	30.74	12.78
BANKURA	WEST BENGAL	0.86	0.04	10.90	3.27	3.92	1.34	17.89	6.69
PURULIYA	WEST BENGAL	1.38	0.64	11.95	3.95	4.20	1.66	23.31	10.04
HAORA	WEST BENGAL	1.53	0.83	9.14	2.51	4.86	1.87	16.05	7.58
KOLKATA	WEST BENGAL	1.62	0.90	13.97	4.48	4.55	1.79	25.79	9.75
SOUTH TWENTY FOUR PARGANAS	WEST BENGAL	1.36	0.69	7.79	2.12	3.52	1.32	30.09	11.10
PASCHIM MEDINIPUR	WEST BENGAL	1.36	0.72	15.83	6.29	5.64	2.88	18.61	8.30
PURBA MEDINIPUR	WEST BENGAL	1.11	0.46	9.43	2.59	4.49	1.70	32.86	13.90
GARHWA	JHARKHAND	3.08	1.27	19.85	6.81	10.34	4.20	33.48	13.32
CHATRA	JHARKHAND	4.05	2.38	22.67	9.07	13.83	7.72	31.91	11.43
KODARMA	JHARKHAND	4.34	2.82	24.00	8.08	11.29	4.46	41.94	15.16
GIRIDIH	JHARKHAND	4.95	4.57	25.85	8.77	11.52	6.08	49.50	15.04
DEOGHAR	JHARKHAND	8.17	5.76	39.68	9.91	19.72	8.49	62.95	12.36
GODDA	JHARKHAND	3.90	1.91	28.42	9.00	9.21	4.08	53.17	15.23
SAHIBGANJ	JHARKHAND	6.26	3.83	29.90	10.73	17.65	9.92	49.80	13.89
PAKUR	JHARKHAND	4.02	2.09	26.24	8.73	10.61	4.74	28.02	11.01
DHANBAD	JHARKHAND	5.98	3.83	28.51	8.09	10.39	5.84	43.20	15.46

BOKARO	JHARKHAND	3.13	1.39	23.04	6.74	6.38	2.35	27.14	8.97
LOHARDAGA	JHARKHAND	2.69	1.09	11.66	3.72	4.95	1.43	18.95	7.85
PURBI SINGHBHUM	JHARKHAND	3.33	1.62	12.39	3.52	6.86	2.44	31.64	12.53
PALAMU	JHARKHAND	3.08	1.44	15.68	4.49	5.67	1.92	29.07	11.04
LATEHAR	JHARKHAND	2.69	1.20	19.25	8.44	4.80	1.67	27.82	11.83
HAZARIBAGH	JHARKHAND	3.09	1.53	27.20	10.35	10.22	4.51	35.38	12.33
RAMGARH	JHARKHAND	2.26	0.62	16.83	5.54	5.21	1.90	34.47	12.38
DUMKA	JHARKHAND	4.77	3.90	19.03	6.84	9.38	4.84	36.83	12.50
JAMTARA	JHARKHAND	4.59	3.75	17.80	8.13	6.55	3.66	35.89	12.76
RANCHI	JHARKHAND	6.94	5.40	19.34	7.15	9.36	5.29	36.14	11.86
KHUNTI	JHARKHAND	4.93	2.81	27.45	9.45	10.40	5.32	45.32	12.85
GUMLA	JHARKHAND	2.00	0.56	13.63	5.09	4.98	2.24	25.20	10.48
SIMDEGA	JHARKHAND	3.29	1.70	20.50	7.18	7.45	2.88	45.49	15.10
PASHCHIMI SINGHBHUM	JHARKHAND	4.19	4.88	13.40	5.92	7.01	4.80	38.68	12.84
SARAIKELA-KHARSAWAN	JHARKHAND	2.14	0.59	18.99	6.88	5.31	3.73	37.64	12.79
BARGARH	ODISHA	0.86	0.04	4.15	1.00	1.75	0.49	13.64	5.43
JHARSUGUDA	ODISHA	0.91	0.04	4.10	0.83	1.54	0.04	8.48	3.90
SAMBALPUR	ODISHA	0.89	0.04	3.99	0.66	1.43	0.05	10.45	3.84
DEBAGARH	ODISHA	0.91	0.03	3.49	0.12	1.54	0.05	13.54	6.70
SUNDARGARH	ODISHA	2.92	3.15	9.69	4.51	4.17	2.93	18.72	9.78
KENDUJHAR	ODISHA	1.47	0.78	8.99	3.64	2.78	1.11	25.74	11.04
MAYURBHANJ	ODISHA	2.47	1.81	9.00	5.48	4.58	4.43	29.23	12.81
BALESHWAR	ODISHA	0.85	0.04	4.93	1.07	1.42	0.06	21.54	8.83
BHADRAK	ODISHA	1.06	0.37	10.35	3.21	1.97	0.57	19.20	8.20
KENDRAPARA	ODISHA	1.67	0.98	9.45	3.08	3.87	1.68	22.90	8.81
JAGATSINGHAPUR	ODISHA	1.14	0.44	6.12	1.69	1.78	0.45	26.62	10.62
CUTTACK	ODISHA	1.68	0.95	6.46	1.96	2.68	1.08	27.90	11.28
JAJAPUR	ODISHA	1.10	0.50	12.87	4.30	2.16	0.73	15.31	8.37
DHENKANAL	ODISHA	0.88	0.03	7.35	2.67	1.87	0.45	18.63	8.21
ANUGUL	ODISHA	1.11	0.52	8.10	2.91	2.11	0.74	18.66	9.00
NAYAGARH	ODISHA	1.16	0.49	4.46	0.97	1.76	0.49	15.52	7.09
KHORDHA	ODISHA	1.15	0.41	8.10	2.33	2.24	0.70	9.99	3.43
PURI	ODISHA	0.88	0.03	4.33	0.97	1.38	0.05	9.63	3.08
GANJAM	ODISHA	1.45	0.78	8.16	3.50	3.45	1.48	16.07	9.82
GAJAPATI	ODISHA	1.39	0.67	5.51	1.35	2.57	0.94	18.65	7.87
KANDHAMAL	ODISHA	0.80	0.03	3.52	0.73	1.27	0.05	17.18	11.83

BAUDH	ODISHA	1.10	0.49	5.59	1.59	2.12	0.74	18.27	8.44
SUBARNAPUR	ODISHA	0.86	0.03	3.71	0.53	1.40	0.05	10.62	4.13
BALANGIR	ODISHA	1.14	0.41	4.32	0.90	1.78	0.42	9.19	3.76
NUAPADA	ODISHA	1.07	0.37	3.95	0.81	1.33	0.04	14.94	6.03
KALAHANDI	ODISHA	0.88	0.04	6.17	1.59	1.81	0.44	11.04	5.33
RAYAGADA	ODISHA	2.03	3.31	5.67	3.19	3.19	3.00	13.35	5.01
NABARANGAPUR	ODISHA	1.00	0.34	4.35	1.07	1.81	0.49	17.73	6.95
KORAPUT	ODISHA	0.85	0.03	3.56	0.64	1.36	0.05	9.81	5.49
MALKANGIRI	ODISHA	0.78	0.03	4.54	1.14	1.84	0.54	16.15	6.44
KORIYA	CHHATTISGARH	2.39	1.21	12.04	4.15	6.43	3.34	46.86	14.47
JASHPUR	CHHATTISGARH	1.89	0.68	7.90	4.18	4.01	1.13	32.55	12.68
RAIGARH	CHHATTISGARH	1.64	0.06	9.47	3.47	4.48	1.24	50.50	14.74
KORBA	CHHATTISGARH	5.25	2.86	24.14	6.60	10.09	4.08	54.64	12.52
JANJGIR - CHAMPA	CHHATTISGARH	2.53	1.34	13.16	3.89	5.96	2.45	35.82	11.43
KABEERDHAM	CHHATTISGARH	1.53	0.06	7.38	1.70	4.05	1.01	40.09	12.84
RAJNANDGAON	CHHATTISGARH	1.98	0.73	9.55	2.29	4.82	1.46	24.33	8.16
MAHASAMUND	CHHATTISGARH	2.78	1.37	15.12	4.12	6.21	2.28	39.19	13.07
DHAMTARI	CHHATTISGARH	2.71	2.83	15.49	6.44	4.62	1.35	29.18	9.76
UTTAR BASTAR KANKER	CHHATTISGARH	3.47	1.72	10.87	2.51	6.08	1.96	34.68	12.81
NARAYANPUR	CHHATTISGARH	1.91	0.61	13.94	6.27	7.75	3.74	37.03	12.72
BIJAPUR	CHHATTISGARH	7.46	6.49	19.53	8.03	11.48	5.74	37.58	15.03
SHEOPUR	MADHYA PRADESH	5.29	6.05	28.71	9.44	17.30	8.62	40.26	13.52
MORENA	MADHYA PRADESH	5.05	3.42	26.76	9.72	12.53	6.80	36.04	14.40
BHIND	MADHYA PRADESH	3.87	2.84	25.34	7.92	8.02	4.39	43.03	12.78
GWALIOR	MADHYA PRADESH	6.79	5.65	16.88	6.25	12.71	6.56	35.91	11.54
DATIA	MADHYA PRADESH	3.75	2.64	18.22	5.90	8.95	3.18	42.40	12.88
SHIVPURI	MADHYA PRADESH	6.16	3.54	31.52	8.89	15.07	6.53	45.71	11.40
TIKAMGARH	MADHYA PRADESH	2.90	1.36	19.24	5.32	9.47	4.10	42.18	10.36
CHHATARPUR	MADHYA PRADESH	2.14	0.56	23.50	7.69	9.14	4.94	41.64	14.68
PANNA	MADHYA PRADESH	6.10	4.73	29.38	10.12	16.15	6.11	37.70	13.79
SAGAR	MADHYA PRADESH	2.72	2.00	19.77	7.38	9.54	4.68	40.59	12.80
DAMOH	MADHYA PRADESH	5.04	3.71	32.12	10.85	14.80	6.32	35.91	12.50
SATNA	MADHYA PRADESH	2.51	1.20	19.96	7.01	8.43	3.15	36.91	12.07
REWA	MADHYA PRADESH	3.61	2.17	25.77	8.02	6.25	2.35	47.89	12.70
UMARIA	MADHYA PRADESH	2.47	0.98	10.82	4.32	5.70	2.47	54.37	13.56
NEEMUCH	MADHYA PRADESH	3.40	1.84	11.24	3.66	6.95	3.31	25.86	10.23
MANDSAUR	MADHYA PRADESH	5.17	2.90	21.13	6.64	9.18	3.65	30.72	10.24

RATLAM	MADHYA PRADESH	2.81	1.29	8.69	3.41	5.42	3.09	18.84	8.33
UJJAIN	MADHYA PRADESH	2.15	0.76	8.26	1.96	5.10	1.52	25.74	7.77
DEWAS	MADHYA PRADESH	2.12	0.73	12.76	4.02	4.36	1.19	25.38	11.00
DHAR	MADHYA PRADESH	2.91	1.25	18.31	4.74	8.71	3.44	49.45	9.77
INDORE	MADHYA PRADESH	2.47	1.11	14.63	6.45	7.72	4.08	28.49	10.15
KHARGONE (WEST NIMAR)	MADHYA PRADESH	3.17	1.68	19.39	6.08	8.45	3.34	33.64	11.60
BARWANI	MADHYA PRADESH	5.97	6.75	19.27	7.42	10.24	6.10	31.26	14.32
RAJGARH	MADHYA PRADESH	4.46	3.44	23.96	8.04	9.72	4.36	39.35	13.59
VIDISHA	MADHYA PRADESH	4.88	4.09	17.40	6.19	9.99	4.53	23.04	9.70
BHOPAL	MADHYA PRADESH	2.30	0.20	33.39	9.39	15.88	6.59	33.82	9.57
SEHORE	MADHYA PRADESH	4.08	3.32	32.28	9.93	13.83	6.05	31.96	12.02
RAISEN	MADHYA PRADESH	3.26	1.91	20.38	7.22	9.81	4.02	31.94	12.96
BETUL	MADHYA PRADESH	3.22	1.61	16.10	4.60	7.11	2.60	27.35	10.04
HARDA	MADHYA PRADESH	1.77	0.08	10.26	2.85	4.71	1.26	18.22	7.62
HOSHANGABAD	MADHYA PRADESH	2.73	1.39	22.81	7.15	8.66	3.38	27.20	9.12
KATNI	MADHYA PRADESH	2.53	0.83	15.03	5.41	4.79	1.05	21.25	8.78
JABALPUR	MADHYA PRADESH	3.86	1.89	17.24	4.77	7.60	2.67	28.31	10.51
NARSIMHAPUR	MADHYA PRADESH	5.52	5.69	15.59	6.06	9.45	5.53	33.18	12.14
DINDORI	MADHYA PRADESH	3.96	2.19	17.45	5.31	10.45	4.35	39.36	12.88
MANDLA	MADHYA PRADESH	2.41	0.95	10.77	2.83	5.67	1.88	27.15	12.18
CHHINDWARA	MADHYA PRADESH	3.22	1.73	23.99	8.56	9.91	6.07	35.61	11.41
SEONI	MADHYA PRADESH	2.13	0.61	11.08	3.62	5.66	2.11	25.05	8.54
BALAGHAT	MADHYA PRADESH	3.09	1.55	18.35	5.66	5.55	1.74	25.95	11.63
GUNA	MADHYA PRADESH	4.74	3.42	18.33	5.72	9.80	4.13	22.11	10.08
ASHOKNAGAR	MADHYA PRADESH	2.30	0.78	24.82	6.57	13.23	4.53	38.42	12.20
SHAHDOL	MADHYA PRADESH	2.50	1.53	13.07	4.07	5.93	2.51	20.36	7.36
ANUPPUR	MADHYA PRADESH	3.72	2.76	12.03	3.53	7.94	3.55	19.81	7.33
SIDHI	MADHYA PRADESH	2.48	1.15	19.40	7.48	6.98	3.59	29.27	11.72
SINGRAULI	MADHYA PRADESH	5.81	4.67	19.75	6.50	14.84	7.00	54.42	12.57
JHABUA	MADHYA PRADESH	3.00	2.16	10.76	3.37	5.68	2.34	18.39	9.32
ALIRAJPUR	MADHYA PRADESH	2.91	1.95	13.84	4.41	8.82	3.30	35.10	15.53
KHANDWA (EAST NIMAR)	MADHYA PRADESH	2.92	1.38	13.94	4.12	6.68	2.66	22.43	9.91
BURHANPUR	MADHYA PRADESH	3.07	1.69	10.04	3.85	6.59	3.63	31.54	14.03
KACHCHH	GUJARAT	3.54	1.60	24.02	8.03	9.46	4.97	47.08	13.63
BANAS KANTHA	GUJARAT	12.12	6.26	51.39	11.91	29.94	10.56	73.65	9.39
PATAN	GUJARAT	2.74	1.16	16.53	5.75	4.97	1.50	31.66	12.71

MAHESANA	GUJARAT	6.86	3.83	19.92	5.45	11.47	4.27	55.28	13.34
GANDHINAGAR	GUJARAT	5.07	2.66	18.29	4.66	7.74	2.84	46.13	11.03
PORBANDAR	GUJARAT	3.02	1.25	15.29	4.45	5.16	1.42	37.00	10.54
AMRELI	GUJARAT	2.63	0.74	32.42	8.86	13.76	5.40	44.14	13.34
ANAND	GUJARAT	2.61	0.98	17.57	4.78	6.94	2.20	61.25	14.97
DOHAD	GUJARAT	7.62	6.01	29.23	10.39	18.88	9.67	62.12	16.11
NARMADA	GUJARAT	5.75	2.87	15.20	5.76	10.49	5.88	42.64	13.81
BHARUCH	GUJARAT	4.43	2.38	18.15	5.04	9.49	3.53	62.36	12.68
THE DANGS	GUJARAT	3.67	2.85	10.19	3.46	7.35	3.50	38.77	13.43
NAVSARI	GUJARAT	2.55	0.92	8.61	2.22	6.09	2.19	31.04	10.52
VALSAD	GUJARAT	3.77	2.00	11.32	4.32	6.67	3.80	30.66	13.18
SURAT	GUJARAT	2.18	0.10	9.86	2.03	5.58	1.47	34.39	12.80
TAPI	GUJARAT	2.21	0.10	7.43	1.01	3.94	0.22	45.74	12.83
DIU	DNH & D & DIU	1.38	0.06	5.67	2.14	2.34	0.08	19.99	8.35
DAMAN	DNH & D & DIU	3.36	1.80	13.91	5.14	8.20	4.07	38.98	10.47
DADRA & NAGAR HAVELI	DNH & D & DIU	1.18	0.05	3.20	0.14	1.94	0.07	10.78	5.75
NANDURBAR	MAHARASHTRA	3.39	2.12	21.91	8.34	9.03	5.05	70.17	12.90
DHULE	MAHARASHTRA	9.07	6.47	38.25	10.51	25.74	11.77	64.16	12.32
JALGAON	MAHARASHTRA	6.84	4.52	30.08	8.47	16.04	6.48	68.61	11.21
BULDANA	MAHARASHTRA	2.33	0.72	14.16	6.25	8.27	3.34	36.05	11.99
AKOLA	MAHARASHTRA	5.21	2.80	25.96	10.21	12.01	5.87	41.20	12.54
WASHIM	MAHARASHTRA	3.87	1.88	24.45	7.58	8.84	3.77	30.70	9.81
AMRAVATI	MAHARASHTRA	2.96	2.04	9.93	3.69	5.02	1.92	27.69	10.48
WARDHA	MAHARASHTRA	1.97	0.13	10.35	2.46	4.58	0.81	30.39	10.06
NAGPUR	MAHARASHTRA	1.83	0.08	12.16	3.60	6.10	2.81	23.48	7.16
BHANDARA	MAHARASHTRA	2.66	0.95	14.09	3.69	5.98	1.87	25.64	8.41
GONDIYA	MAHARASHTRA	3.11	1.46	12.75	4.57	6.53	2.22	30.23	10.86
GADCHIROLI	MAHARASHTRA	1.88	0.07	7.09	1.17	3.55	0.14	24.09	8.51
CHANDRAPUR	MAHARASHTRA	2.00	0.09	8.54	1.70	4.60	1.04	44.92	11.43
YAVATMAL	MAHARASHTRA	2.66	1.16	21.47	5.85	7.77	3.03	40.50	12.84
NANDED	MAHARASHTRA	5.63	3.60	21.38	6.64	13.34	6.36	47.06	14.08
HINGOLI	MAHARASHTRA	1.83	0.10	21.62	6.99	5.61	2.02	48.75	11.85
PARBHANI	MAHARASHTRA	5.69	2.99	41.17	10.09	15.77	8.41	68.39	10.56
JALNA	MAHARASHTRA	6.03	3.19	37.21	8.07	15.87	5.55	62.24	11.17
AURANGABAD	MAHARASHTRA	2.27	0.97	35.07	9.80	11.52	5.12	60.60	13.12
NASHIK	MAHARASHTRA	4.45	3.71	20.45	10.26	12.34	9.80	42.64	14.59

MUMBAI SUBURBAN	MAHARASHTRA	5.27	2.90	28.96	6.31	9.32	3.77	50.28	14.32
MUMBAI	MAHARASHTRA	2.33	0.11	11.92	2.09	4.68	0.24	54.21	11.75
RAIGARH	MAHARASHTRA	2.75	1.16	11.40	2.74	5.42	1.56	41.76	13.06
PUNE	MAHARASHTRA	3.77	3.08	28.45	7.61	14.46	6.47	49.70	12.72
AHMADNAGAR	MAHARASHTRA	2.66	1.21	14.88	4.73	5.77	1.95	39.31	11.94
BID	MAHARASHTRA	4.57	2.52	20.40	5.89	8.19	3.38	43.35	11.38
LATUR	MAHARASHTRA	3.74	1.77	18.31	6.09	8.95	4.26	37.46	13.66
OSMANABAD	MAHARASHTRA	2.24	0.70	11.58	3.51	4.74	1.56	43.25	14.83
SOLAPUR	MAHARASHTRA	4.37	3.09	14.90	5.67	8.48	5.49	45.94	12.66
SATARA	MAHARASHTRA	2.94	1.28	16.17	5.47	7.06	2.45	30.77	10.06
RATNAGIRI	MAHARASHTRA	4.10	2.20	17.24	4.63	9.43	3.65	44.65	12.79
SINDHUDURG	MAHARASHTRA	2.96	1.13	18.67	5.89	8.19	4.27	45.93	12.74
KOLHAPUR	MAHARASHTRA	6.58	3.77	27.74	8.52	15.52	6.63	65.80	11.12
SANGLI	MAHARASHTRA	2.89	1.35	20.58	6.45	7.60	2.58	56.39	15.85
SRIKAKULAM	ANDHRA PRADESH	3.69	1.83	16.16	4.56	6.46	2.07	22.89	7.94
VIZIANAGARAM	ANDHRA PRADESH	2.19	0.11	19.65	5.84	6.57	2.19	48.96	13.61
VISAKHAPATNAM	ANDHRA PRADESH	2.10	0.12	20.54	5.50	5.64	1.96	60.81	10.62
EAST GODAVARI	ANDHRA PRADESH	5.40	2.84	33.06	8.22	14.50	4.95	42.28	11.22
WEST GODAVARI	ANDHRA PRADESH	4.18	2.65	18.38	4.75	7.19	2.50	20.60	8.60
KRISHNA	ANDHRA PRADESH	4.68	4.21	13.98	4.38	8.73	4.36	43.67	11.95
GUNTUR	ANDHRA PRADESH	2.71	0.89	19.79	5.24	6.36	2.57	42.32	13.75
PRAKASAM	ANDHRA PRADESH	6.08	3.54	37.13	8.44	19.20	7.87	44.12	12.77
SRI POTTI SRIRAMULU NELLORE	ANDHRA PRADESH	6.61	5.39	29.89	7.71	12.93	6.19	31.40	10.09
Y.S.R.	ANDHRA PRADESH	5.20	2.88	17.01	5.30	8.54	3.39	37.39	13.87
KURNOOL	ANDHRA PRADESH	3.61	2.95	26.26	11.37	10.46	4.61	46.57	13.76
ANANTAPUR	ANDHRA PRADESH	3.19	1.45	17.34	4.59	6.51	2.22	35.27	12.53
CHITTOOR	ANDHRA PRADESH	2.68	1.18	28.93	7.89	8.52	3.21	40.50	13.75
BELGAUM	KARNATAKA	2.74	2.26	14.78	4.97	5.94	3.20	38.43	12.75
BAGALKOT	KARNATAKA	1.79	0.76	16.32	5.00	5.00	1.91	45.47	14.48
BIJAPUR	KARNATAKA	3.25	1.83	21.86	7.94	11.07	4.94	51.62	12.07
BIDAR	KARNATAKA	2.53	1.37	19.67	8.55	11.58	7.74	45.66	15.20
RAICHUR	KARNATAKA	3.98	4.19	14.05	6.88	8.22	7.21	42.89	13.47
KOPPAL	KARNATAKA	1.99	1.04	11.63	3.45	5.93	2.13	46.93	12.85
GADAG	KARNATAKA	4.32	3.68	19.41	7.11	10.13	6.26	39.64	12.45
DHARWAD	KARNATAKA	1.32	0.06	10.86	2.98	3.73	0.91	29.23	11.58
UTTARA KANNADA	KARNATAKA	1.77	0.82	8.26	2.58	4.00	1.51	30.48	11.77

HAVERI	KARNATAKA	1.52	0.56	6.02	1.44	3.35	1.00	32.11	12.09
BELLARY	KARNATAKA	1.35	0.07	19.66	6.31	6.50	2.57	32.30	10.16
CHITRADURGA	KARNATAKA	1.72	0.57	6.73	1.44	3.30	0.60	17.91	7.67
DAVANAGERE	KARNATAKA	2.09	0.92	15.12	4.97	6.45	2.71	42.41	12.88
SHIMOGA	KARNATAKA	1.34	0.06	6.31	1.36	3.25	0.82	22.98	9.02
UDUPI	KARNATAKA	1.71	0.71	8.86	2.52	3.75	1.22	23.61	12.26
CHIKMAGALUR	KARNATAKA	1.35	0.06	8.35	2.76	2.70	0.14	33.37	12.23
TUMKUR	KARNATAKA	1.38	0.07	5.37	0.62	3.36	0.65	24.96	11.84
BANGALORE	KARNATAKA	2.79	1.51	15.02	6.52	7.98	3.88	43.08	13.62
MANDYA	KARNATAKA	1.43	0.06	7.57	1.75	2.99	0.10	17.30	6.31
HASSAN	KARNATAKA	1.46	0.04	6.18	1.15	2.89	0.09	31.37	10.89
DAKSHINA KANNADA	KARNATAKA	1.81	0.82	11.53	3.75	4.18	1.53	34.23	14.03
KODAGU	KARNATAKA	2.63	1.61	8.85	2.69	4.86	2.07	36.19	11.11
MYSORE	KARNATAKA	1.36	0.06	5.83	1.22	2.79	0.12	30.98	10.23
CHAMARAJANAGAR	KARNATAKA	1.86	0.80	8.08	2.16	3.49	0.87	21.12	9.00
GULBARGA	KARNATAKA	2.88	1.97	21.15	7.35	11.18	4.96	48.43	14.39
YADGIR	KARNATAKA	3.03	2.45	15.81	5.48	8.21	4.16	49.29	13.89
KOLAR	KARNATAKA	4.10	4.75	10.39	4.88	7.16	5.03	20.78	8.34
CHIKKABALLAPURA	KARNATAKA	2.00	0.99	14.13	5.90	4.81	1.64	22.60	7.83
BANGALORE RURAL	KARNATAKA	1.34	0.06	6.85	1.58	2.57	0.11	23.02	10.04
RAMANAGARA	KARNATAKA	1.47	0.05	5.70	0.19	3.13	0.12	27.39	8.59
NORTH GOA	GOA	1.68	0.62	15.97	4.42	6.05	2.28	64.30	11.38
SOUTH GOA	GOA	1.50	0.06	10.05	2.25	4.51	0.99	72.72	12.02
LAKSHADWEEP	LAKSHADWEEP	5.54	3.87	13.00	3.94	7.54	3.72	84.45	6.25
KASARAGOD	KERALA	1.94	0.72	10.88	3.37	4.87	1.57	64.78	14.62
KANNUR	KERALA	3.64	3.75	19.43	8.67	11.70	6.99	79.02	10.27
WAYANAD	KERALA	3.93	2.24	13.65	4.33	7.45	2.67	55.35	14.04
KOZHIKODE	KERALA	2.44	1.16	11.41	3.55	6.88	2.35	81.44	9.16
MALAPPURAM	KERALA	2.36	1.11	16.78	6.07	9.37	3.79	69.98	14.90
PALAKKAD	KERALA	5.29	3.28	39.25	10.35	15.83	6.11	63.61	12.17
THRISSUR	KERALA	2.44	0.93	20.17	5.65	7.62	2.57	71.02	9.65
ERNAKULAM	KERALA	2.29	1.08	17.64	5.83	8.05	3.23	76.04	8.59
IDUKKI	KERALA	1.72	0.07	11.80	2.94	6.52	2.27	82.32	7.53
KOTTAYAM	KERALA	2.37	0.97	18.96	4.09	7.08	2.32	53.30	12.36
ALAPPUZHA	KERALA	1.79	0.08	28.97	9.50	9.51	3.91	57.18	12.34

PATHANAMTHITTA	KERALA	1.87	0.08	19.82	5.50	9.52	3.53	58.43	12.32
KOLLAM	KERALA	2.36	1.01	17.27	4.99	10.17	3.91	69.42	9.41
THIRUVANANTHAPURAM	KERALA	1.74	0.07	21.51	5.84	6.93	2.50	75.94	9.39
THIRUVALLUR	TAMIL NADU	1.27	0.53	6.93	1.94	2.09	0.56	20.44	7.82
CHENNAI	TAMIL NADU	1.05	0.04	5.18	1.16	2.27	0.73	31.36	9.60
KANCHEEPURAM	TAMIL NADU	1.85	1.01	18.65	6.53	4.28	2.36	27.69	10.87
VELLORE	TAMIL NADU	2.48	1.53	6.92	2.24	2.88	1.14	23.10	9.41
TIRUVANNAMALAI	TAMIL NADU	1.41	0.53	5.07	0.88	2.41	0.64	17.84	7.12
VILUPPURAM	TAMIL NADU	1.05	0.05	8.60	2.46	2.43	0.69	22.66	9.72
SALEM	TAMIL NADU	1.08	0.04	12.49	3.87	4.93	2.13	32.91	11.30
NAMAKKAL	TAMIL NADU	1.37	0.59	9.79	2.83	2.36	0.72	22.29	8.35
ERODE	TAMIL NADU	1.00	0.04	5.79	1.64	1.71	0.08	20.54	8.12
THE NILGIRIS	TAMIL NADU	1.01	0.04	6.85	1.83	2.82	1.08	28.05	10.59
DINDIGUL	TAMIL NADU	1.21	0.44	6.18	1.49	2.42	0.72	14.03	6.00
KARUR	TAMIL NADU	1.80	0.88	10.77	4.04	2.89	0.96	33.69	11.98
TIRUCHIRAPPALLI	TAMIL NADU	1.41	0.57	5.28	0.86	2.37	0.66	31.10	11.18
PERAMBALUR	TAMIL NADU	1.74	0.99	6.72	1.86	2.86	1.10	22.77	8.48
ARIYALUR	TAMIL NADU	1.04	0.04	6.80	1.68	1.86	0.07	12.16	4.65
CUDDALORE	TAMIL NADU	1.33	0.48	12.90	5.25	2.26	0.56	23.70	9.62
NAGAPATTINAM	TAMIL NADU	1.05	0.04	5.99	1.61	2.33	0.70	21.10	8.38
THIRUVARUR	TAMIL NADU	1.07	0.03	5.50	1.19	1.86	0.08	25.11	10.16
THANJAVUR	TAMIL NADU	1.42	0.62	11.28	4.72	3.96	2.75	16.89	6.40
PUDUKKOTTAI	TAMIL NADU	1.24	0.50	9.01	3.89	2.46	0.68	20.74	8.66
SIVAGANGA	TAMIL NADU	1.25	0.42	7.95	2.37	2.61	0.85	21.13	10.11
MADURAI	TAMIL NADU	1.71	0.88	8.43	2.32	2.73	0.95	20.83	8.80
THENI	TAMIL NADU	1.14	0.45	5.27	1.49	2.21	0.80	11.04	3.58
VIRUDHUNAGAR	TAMIL NADU	1.03	0.04	12.97	3.64	1.76	0.06	22.31	9.48
RAMANATHAPURAM	TAMIL NADU	2.52	2.33	7.56	2.97	2.53	0.83	16.97	6.78
THOOTHUKKUDI	TAMIL NADU	1.00	0.04	3.78	0.12	1.71	0.06	13.73	4.58
TIRUNELVELI	TAMIL NADU	1.30	0.43	6.40	1.60	2.12	0.48	14.49	5.48
KANNIYAKUMARI	TAMIL NADU	1.02	0.04	5.44	1.18	1.88	0.08	18.72	8.58
DHARMAPURI	TAMIL NADU	1.27	0.54	7.57	2.84	2.54	0.86	24.72	10.19
KRISHNAGIRI	TAMIL NADU	1.58	0.84	9.36	3.15	4.31	1.84	25.15	10.78
COIMBATORE	TAMIL NADU	1.42	0.72	6.34	1.59	2.42	0.76	15.10	5.80
TIRUPPUR	TAMIL NADU	1.09	0.04	5.66	1.28	2.66	0.90	31.42	10.49
YANAM	PUDUCHERRY	2.17	1.12	15.86	5.16	4.16	1.65	27.35	11.28

PUDUCHERRY	PUDUCHERRY	1.34	0.07	17.06	6.49	3.50	1.34	16.01	6.22
MAHE	PUDUCHERRY	2.00	0.85	8.27	1.58	2.63	0.12	16.04	5.13
KARAIKAL	PUDUCHERRY	1.78	0.72	12.01	3.02	3.37	1.00	17.21	7.18
NICOBARS	ANDAMAN & NICOBAR ISLANDS	7.67	4.51	27.67	7.43	20.08	7.58	38.41	12.08
NORTH & MIDDLE ANDAMAN	ANDAMAN & NICOBAR ISLANDS	2.34	0.11	14.31	3.23	10.61	3.50	23.93	8.23
SOUTH ANDAMAN	ANDAMAN & NICOBAR ISLANDS	2.01	0.06	20.62	5.69	14.15	5.30	21.87	7.18
EAST SIANG	ARUNACHAL PRADESH	9.57	5.21	47.74	10.22	15.46	6.99	49.28	12.08
KRA DAADI	ARUNACHAL PRADESH	6.98	3.03	35.83	8.29	15.94	6.69	63.42	11.60
KURUNG KUMEY	ARUNACHAL PRADESH	5.47	2.31	26.19	8.57	9.63	4.12	50.92	12.60
LOHIT	ARUNACHAL PRADESH	4.55	2.03	25.44	8.45	10.68	3.76	57.17	12.85
LONGDING	ARUNACHAL PRADESH	22.19	14.24	43.42	11.51	31.30	12.90	43.23	14.36
NAMSAI	ARUNACHAL PRADESH	8.88	6.81	27.26	9.32	13.78	7.17	38.56	11.81
SIANG	ARUNACHAL PRADESH	8.98	4.80	33.35	8.96	16.45	6.15	48.02	14.65
TIRAP	ARUNACHAL PRADESH	6.42	2.73	30.84	10.56	16.70	7.13	40.16	12.37
WEST SIANG	ARUNACHAL PRADESH	4.89	2.12	40.76	9.45	10.96	3.84	61.24	12.42
BISWANATH	ASSAM	5.33	2.70	31.94	9.68	11.43	5.19	65.37	12.97
CHARAIDEO	ASSAM	4.03	1.64	25.45	7.25	9.44	3.49	63.50	13.28
DHUBRI	ASSAM	4.54	2.87	25.79	9.04	11.83	7.72	57.43	16.07
HOJAI	ASSAM	15.59	9.80	39.35	10.64	29.77	12.40	67.66	13.46
JORHAT	ASSAM	4.39	1.87	26.75	7.33	12.29	5.28	63.30	11.66
KARBI ANGLONG	ASSAM	9.34	5.20	35.12	8.30	20.30	8.96	72.73	13.52
MAJULI	ASSAM	4.04	1.92	21.15	6.72	8.46	3.71	63.77	13.59
NAGAON	ASSAM	8.40	5.99	38.33	10.13	24.37	10.23	67.28	13.01
SIVASAGAR	ASSAM	4.41	2.14	22.33	6.13	9.21	3.39	46.03	14.34
SONITPUR	ASSAM	9.72	5.22	28.35	7.93	15.09	6.43	51.84	13.42
SOUTH SALMARA MANCACHAR	ASSAM	7.26	4.54	32.59	10.06	12.40	5.91	81.66	9.23
WEST KARBI ANGLONG	ASSAM	7.66	5.38	43.32	11.72	23.52	10.43	71.48	12.00
BALOD	CHHATTISGARH	2.76	1.40	13.48	4.09	5.95	2.24	21.64	6.84
BALODA BAZAR	CHHATTISGARH	2.34	1.13	20.55	6.02	7.98	2.96	51.68	13.26
BALRAMPUR	CHHATTISGARH	3.80	2.88	18.94	5.78	7.43	3.61	54.91	14.92

BASTAR	CHHATTISGARH	3.05	1.51	34.65	10.01	12.15	5.77	56.90	14.23
BEMETARA	CHHATTISGARH	1.57	0.07	8.63	3.18	5.00	2.80	46.14	11.95
BILASPUR	CHHATTISGARH	5.22	4.10	40.81	10.21	13.76	6.58	45.67	12.61
DANTEWADA	CHHATTISGARH	2.87	2.89	18.42	6.73	10.80	5.96	46.07	12.81
DURG	CHHATTISGARH	2.34	1.75	14.97	4.88	5.48	2.56	30.95	12.37
GARIYABAND	CHHATTISGARH	2.47	1.27	14.21	4.60	5.22	1.89	43.35	14.14
KODAGAON	CHHATTISGARH	2.71	1.24	24.81	7.99	8.92	3.24	62.45	13.94
MUNGELI	CHHATTISGARH	1.96	0.67	17.81	5.31	7.46	3.46	43.21	13.38
RAIPUR	CHHATTISGARH	2.61	1.38	21.13	9.20	8.10	6.14	33.87	12.70
SUKMA	CHHATTISGARH	4.29	3.00	20.05	8.74	14.19	8.00	36.63	11.87
SURAJPUR	CHHATTISGARH	3.90	3.30	16.66	5.69	11.10	5.10	43.78	14.11
SURGUJA	CHHATTISGARH	2.98	2.15	13.34	4.21	3.61	1.22	43.46	14.49
CENTRAL	NCT OF DELHI	2.99	1.49	15.68	4.92	6.25	2.71	23.98	9.77
EAST	NCT OF DELHI	2.64	1.35	21.58	5.86	6.66	2.77	23.78	9.79
NEW DELHI	NCT OF DELHI	1.68	0.07	15.92	4.71	5.65	2.11	18.62	7.84
NORTH	NCT OF DELHI	4.05	3.89	30.31	9.61	7.14	4.10	28.45	8.97
NORTH EAST	NCT OF DELHI	2.98	2.87	12.67	4.33	5.75	3.31	26.04	11.68
NORTH WEST	NCT OF DELHI	4.05	2.04	18.21	5.86	7.89	3.78	19.09	8.30
SHAHDARA	NCT OF DELHI	2.18	0.73	15.49	4.21	6.03	2.05	35.99	10.71
SOUTH	NCT OF DELHI	2.20	0.75	13.25	4.77	4.41	1.21	22.36	7.98
SOUTH EAST	NCT OF DELHI	4.83	3.61	25.62	8.98	8.49	3.98	14.87	5.78
SOUTH WEST	NCT OF DELHI	2.94	1.54	20.70	7.09	6.51	2.56	17.59	7.22
WEST	NCT OF DELHI	4.49	3.21	26.03	8.70	6.83	2.75	23.75	10.09
AHMADABAD	GUJARAT	6.41	3.40	28.36	7.03	11.52	4.69	48.55	12.75
ARAVALI	GUJARAT	4.96	2.84	18.46	6.79	8.78	3.26	55.64	13.11
BHAVNAGAR	GUJARAT	5.36	3.90	21.09	6.37	12.13	5.13	67.02	11.45
BOTAD	GUJARAT	6.59	4.79	30.50	8.62	16.83	7.49	74.30	9.66
CHHOTA UDAIPUR	GUJARAT	4.51	4.97	15.50	6.28	8.15	5.11	44.02	10.71
DEVBHUMI DWARKA	GUJARAT	4.65	3.07	20.04	8.46	12.40	6.95	53.92	14.60
GIR SOMNATH	GUJARAT	2.86	1.07	25.03	6.48	13.23	5.68	66.23	14.77
JAMNAGAR	GUJARAT	2.28	0.11	17.25	4.59	7.10	2.71	31.83	12.96
JUNAGADH	GUJARAT	3.24	1.54	10.35	2.99	5.30	1.56	41.67	12.20
KHEDA	GUJARAT	4.06	4.03	23.87	10.78	9.82	5.90	50.77	13.00
MAHISAGAR	GUJARAT	5.98	5.45	17.40	6.74	7.39	3.36	46.29	14.30
MORBI	GUJARAT	4.65	2.02	28.81	8.71	13.55	5.65	46.82	14.64
PANCH MAHALS	GUJARAT	2.03	0.49	7.00	1.64	4.50	1.44	50.31	13.43
RAJKOT	GUJARAT	3.96	3.19	14.58	6.10	8.97	4.00	51.40	15.02

SABAR KANTHA	GUJARAT	2.81	1.01	11.31	3.72	6.08	2.97	28.93	11.39
SURENDRANAGAR	GUJARAT	6.51	4.14	34.07	10.15	17.32	9.62	36.81	11.55
VADODARA	GUJARAT	3.28	1.64	14.43	4.41	6.47	2.40	56.69	12.85
BHIWANI	HARYANA	2.03	0.80	23.63	7.92	4.21	1.44	42.93	13.94
CHARKHI DADRI	HARYANA	3.51	1.68	14.44	3.74	5.18	1.63	32.96	11.10
AGAR MALWA	MADHYA PRADESH	3.74	1.96	20.97	5.90	11.71	4.79	29.95	10.48
SHAJAPUR	MADHYA PRADESH	1.94	0.59	10.49	2.89	3.96	1.05	39.77	14.92
PALGHAR	MAHARASHTRA	2.15	0.12	9.70	2.27	4.02	0.27	36.74	10.45
THANE	MAHARASHTRA	4.95	4.29	22.84	7.16	11.32	5.65	54.50	12.91
EAST GARO HILLS	MEGHALAYA	10.81	7.42	24.86	9.35	15.41	7.36	86.72	7.06
EAST JANTIA HILLS	MEGHALAYA	7.73	6.78	24.68	8.65	14.41	7.96	60.04	19.16
NORTH GARO HILLS	MEGHALAYA	23.39	11.73	44.63	9.79	32.10	11.58	89.82	4.60
SOUTH WEST GARO HILLS	MEGHALAYA	5.85	3.11	18.27	7.06	9.70	3.96	77.10	10.63
SOUTH WEST KHASI HILLS	MEGHALAYA	4.51	2.75	20.70	8.00	11.95	4.98	75.99	15.86
WEST GARO HILLS	MEGHALAYA	3.51	0.19	21.84	7.67	11.83	6.25	81.08	10.51
WEST JAINTIA HILLS	MEGHALAYA	8.45	5.77	36.44	12.66	23.17	10.78	64.75	16.33
WEST KHASI HILLS	MEGHALAYA	15.95	14.47	35.01	14.07	25.52	14.91	73.40	15.41
FAZILKA	PUNJAB	3.30	2.68	30.89	9.92	10.77	4.29	46.50	12.76
FIROZPUR	PUNJAB	2.91	1.23	23.25	8.02	8.63	2.86	43.89	11.11
GURDASPUR	PUNJAB	4.39	2.41	17.86	5.72	9.12	4.57	47.16	11.97
PATHANKOT	PUNJAB	3.49	1.78	20.41	7.96	7.09	2.69	41.62	13.78
ADILABAD	TELANGANA	5.18	4.16	21.02	10.79	6.40	3.77	31.35	10.82
BHADRADRI KOTHAGUDEM	TELANGANA	2.25	0.77	17.07	5.03	4.01	2.35	29.24	11.24
HYDERABAD	TELANGANA	7.60	4.38	21.82	7.68	11.42	4.56	34.03	13.00
JAGITIAL	TELANGANA	3.16	1.48	18.32	6.57	5.29	2.03	37.64	11.60
JANGOAN	TELANGANA	3.31	1.64	13.67	4.11	4.59	1.54	24.18	8.98
JAYASHANKAR BHUPALAPALLY	TELANGANA	3.34	1.56	13.09	3.44	3.98	0.98	24.65	8.99
JOGULAMBA GADWAL	TELANGANA	3.82	2.00	12.70	5.11	4.96	1.87	33.53	12.84
KAMAREDDY	TELANGANA	2.73	1.19	18.61	5.93	5.87	2.10	32.51	10.65
KARIMNAGAR	TELANGANA	3.25	3.27	21.29	6.01	5.43	1.95	46.37	11.54
KHAMMAM	TELANGANA	2.61	1.25	12.16	3.28	3.90	1.15	19.26	7.67
KOMARAM BHEEM ASIFABAD	TELANGANA	1.77	0.08	17.16	7.23	3.76	0.99	29.02	10.94
MAHABUBABAD	TELANGANA	4.48	2.39	15.46	4.33	7.07	2.62	34.67	12.23

MAHABUBNAGAR	TELANGANA	2.13	0.68	10.97	4.41	3.77	1.29	26.52	13.92
MANCHERIAL	TELANGANA	2.52	1.12	18.69	5.98	7.24	2.81	35.76	12.62
MEDAK	TELANGANA	3.50	1.48	24.61	6.50	8.98	3.47	47.52	12.86
MEDCHAL-MALKAJGIRI	TELANGANA	3.54	1.78	22.05	7.20	7.73	4.21	37.90	12.33
NAGARKURNOOL	TELANGANA	4.12	2.37	16.85	5.07	6.46	2.69	27.66	11.67
NALGONDA	TELANGANA	4.35	2.33	16.46	4.71	4.76	1.51	46.70	12.70
NIRMAL	TELANGANA	2.41	0.87	19.20	6.42	3.61	0.82	26.64	8.80
NIZAMABAD	TELANGANA	2.57	2.11	13.79	5.65	4.25	2.24	47.00	13.32
PEDDAPALLI	TELANGANA	2.74	1.20	20.89	6.13	3.92	1.28	27.81	10.46
RAJANNA SIRCILLA	TELANGANA	3.21	1.55	13.25	3.95	4.46	1.66	32.33	11.01
RANGA REDDY	TELANGANA	4.74	3.97	13.66	5.43	7.92	4.82	36.10	13.07
SANGAREDDY	TELANGANA	2.66	1.00	18.92	7.11	6.58	2.90	46.03	12.94
SIDDIPET	TELANGANA	3.13	1.57	25.76	9.38	5.00	1.76	45.17	13.80
SURYAPET	TELANGANA	4.54	2.47	22.67	6.65	7.40	3.01	37.05	12.85
VIKARABAD	TELANGANA	2.53	1.23	12.67	3.96	4.72	1.74	41.29	12.29
WANAPARTHY	TELANGANA	2.54	1.04	13.79	4.20	3.77	0.97	47.28	12.43
WARANGAL RURAL	TELANGANA	3.44	1.79	14.90	3.86	4.90	1.78	36.41	12.26
WARANGAL URBAN	TELANGANA	3.71	1.83	21.79	5.69	5.24	1.85	21.07	7.40
YADADRI BHUVANAGIRI	TELANGANA	3.87	2.29	19.92	6.11	6.66	2.86	25.78	8.37
GOMATI	TRIPURA	3.51	1.87	31.56	8.20	8.33	3.09	74.59	10.55
KHOWAI	TRIPURA	3.69	3.51	31.48	9.23	12.92	6.24	57.51	12.27
NORTH TRIPURA	TRIPURA	2.75	1.20	27.99	8.36	18.61	7.47	60.16	14.66
SEPAHIJALA	TRIPURA	3.06	1.63	28.42	7.56	11.61	4.54	53.15	12.70
SOUTH TRIPURA	TRIPURA	2.13	0.71	42.46	11.06	11.37	5.65	52.93	11.82
UNAKOTI	TRIPURA	3.30	1.76	31.48	9.73	11.70	5.23	48.91	13.21
WEST TRIPURA	TRIPURA	2.58	1.08	16.71	4.56	7.03	2.35	31.51	9.85
AMETHI	UTTAR PRADESH	3.77	1.49	21.56	6.44	11.22	4.98	29.41	11.06
BUDAUN	UTTAR PRADESH	5.65	3.72	28.51	12.36	10.99	5.17	38.36	9.94
GHAZIABAD	UTTAR PRADESH	7.31	4.46	28.69	8.27	14.06	6.41	43.14	12.19
HAPUR	UTTAR PRADESH	3.01	1.23	15.46	5.54	7.17	2.79	23.06	11.04
MORADABAD	UTTAR PRADESH	3.35	1.58	15.21	6.62	8.83	4.93	37.41	15.92
MUZAFFARNAGAR	UTTAR PRADESH	11.14	7.18	29.28	8.71	18.14	8.26	35.01	12.00
RAE BARELI	UTTAR PRADESH	4.66	4.66	23.05	9.32	12.52	8.65	41.43	13.11
SAMBHAL	UTTAR PRADESH	3.18	1.31	15.08	5.38	7.51	3.59	27.59	11.38
SHAMLI	UTTAR PRADESH	5.50	5.76	11.15	5.03	6.79	4.94	26.35	12.68

SULTANPUR	UTTAR PRADESH	4.88	2.76	19.13	6.69	9.35	3.44	41.53	10.21
PASCHIM BARDDHAMAN	WEST BENGAL	1.07	0.42	26.28	8.57	5.50	2.81	23.55	9.06
PURBA BARDDHAMAN	WEST BENGAL	0.84	0.04	5.30	0.94	2.02	0.09	23.44	10.11

[1] Precision-weighted estimates from multilevel models

"ZD" - Zero Dose. All surviving children aged 12–23 months who did not receive the first dose of diphtheria, tetanus, and pertussis -containing vaccine.

"BI" - Basic immunisation incomplete. All surviving children aged 12–23 months who did not receive 8 vaccine doses recommended in the first year of life: 1 dose of Bacillus Calmette-Guérin (BCG) vaccine, 3 doses of pentavalent vaccine, 3 doses of oral polio vaccine, 1 dose of measles-rubella vaccine.

"No MR-1" - All surviving children aged 12-23 months who did not receive the first dose of measles-rubella-containing vaccine.

"No MR-2" - All surviving children aged 24-35 months who did not receive the second dose of measles-rubella-containing vaccine.

"No Polio-3" - All surviving children aged 12-23 months who did not receive the third dose of oral polio vaccine (OPV).

Table S5. Distribution of 707 districts by district mean prevalence and within-district, between-cluster standard deviation (SD) for four indicators of child under-vaccination, NFHS-5, India

Indicator	Standard Deviation (SD)			# Districts
Zero Dose				
Mean Prevalence	**Low**	**Medium**	**High**	**Total**
Low	221	14	1	236
Medium	14	190	32	236
High	1	32	202	235
Total	236	236	235	701
Basic Incomplete				
Mean Prevalence	**Low**	**Medium**	**High**	**Total**
Low	211	25	0	236
Medium	25	179	32	236
High	0	32	203	235
Total	236	236	235	707
No MR-1				
Mean Prevalence	**Low**	**Medium**	**High**	**Total**
Low	213	23	0	236
Medium	23	186	27	236
High	0	27	208	235
Total	236	236	235	707
No MR-2				
Mean Prevalence	**Low**	**Medium**	**High**	**Total**
Low	176	52	8	236
Medium	23	114	99	236
High	37	70	128	235
Total	236	236	235	707

"Zero-dose" - All surviving children aged 12–23 months who did not receive the first dose of diphtheria, tetanus, and pertussis -containing vaccine.

"Basic Incomplete" - All surviving children aged 12–23 months who did not receive 8 vaccine doses recommended in the first year of life: 1 dose of Bacillus Calmette-Guérin (BCG) vaccine, 3 doses of pentavalent vaccine, 3 doses of oral polio vaccine, 1 dose of measles-rubella vaccine.

"No MR-1" - All surviving children aged 12-23 months who did not receive the first dose of measles-rubella-containing vaccine.

"No MR-2" - All surviving children aged 24-35 months who did not receive the second dose of measles-rubella-containing vaccine.

Figure S6. Dot plots showing the distribution of standard deviations (SDs) for four indicators of child under-vaccination across 707 districts, NFHS-5, India
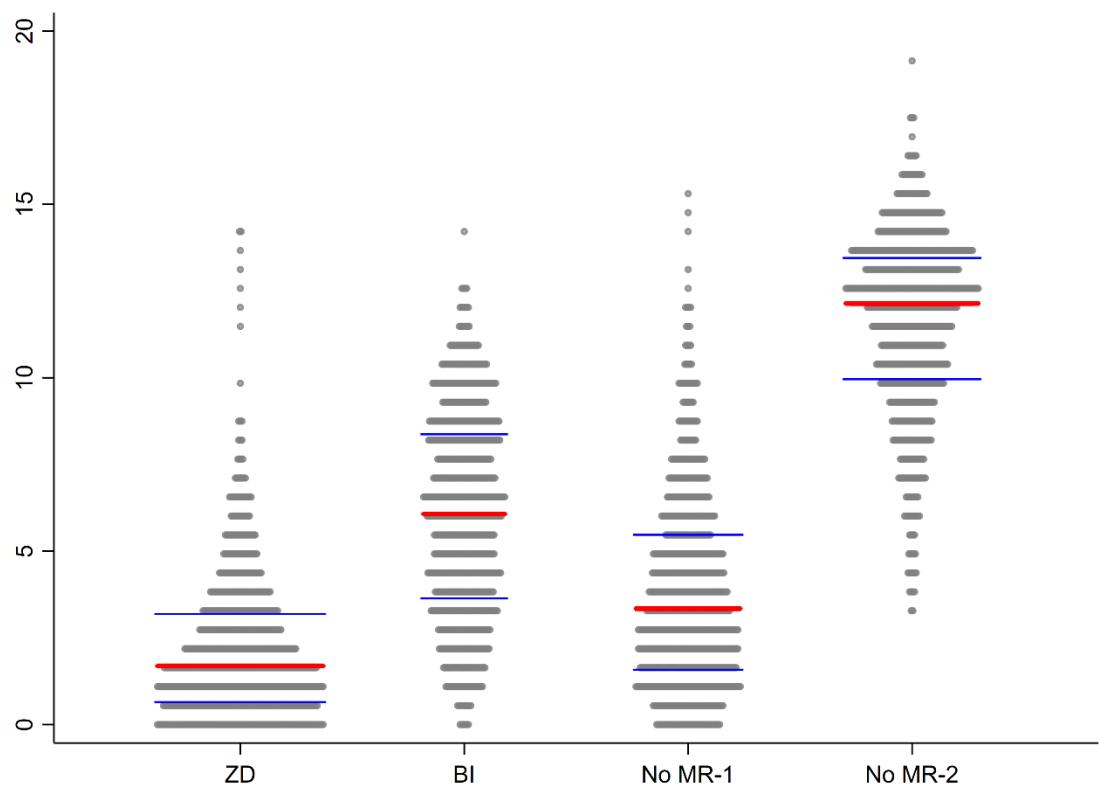
Note: Red lines represent median SD; blue lines represent 25th and 75th percentiles of SD.

"ZD" - Zero Dose: All surviving children aged 12–23 months who did not receive the first dose of diphtheria, tetanus, and pertussis -containing vaccine.
"BI" - Basic incomplete: All surviving children aged 12–23 months who did not receive 8 basic vaccine doses recommended in the first year of life: 1 dose of Bacillus Calmette-Guérin (BCG) vaccine, 3 doses of pentavalent vaccine, 3 doses of oral polio vaccine, 1 dose of measles-rubella vaccine.
"No MR-1" - All surviving children aged 12-23 months who did not receive the first dose of measles-rubella-containing vaccine.
"No MR-2" - All surviving children aged 24-35 months who did not receive the second dose of measles-rubella-containing vaccine.

Figure S7. Box plots of predicted small-area cluster[1] mean prevalence for four indicators of under-vaccination across states and Union Territories, National Family Health Survey 2019-21, India (without outliers)
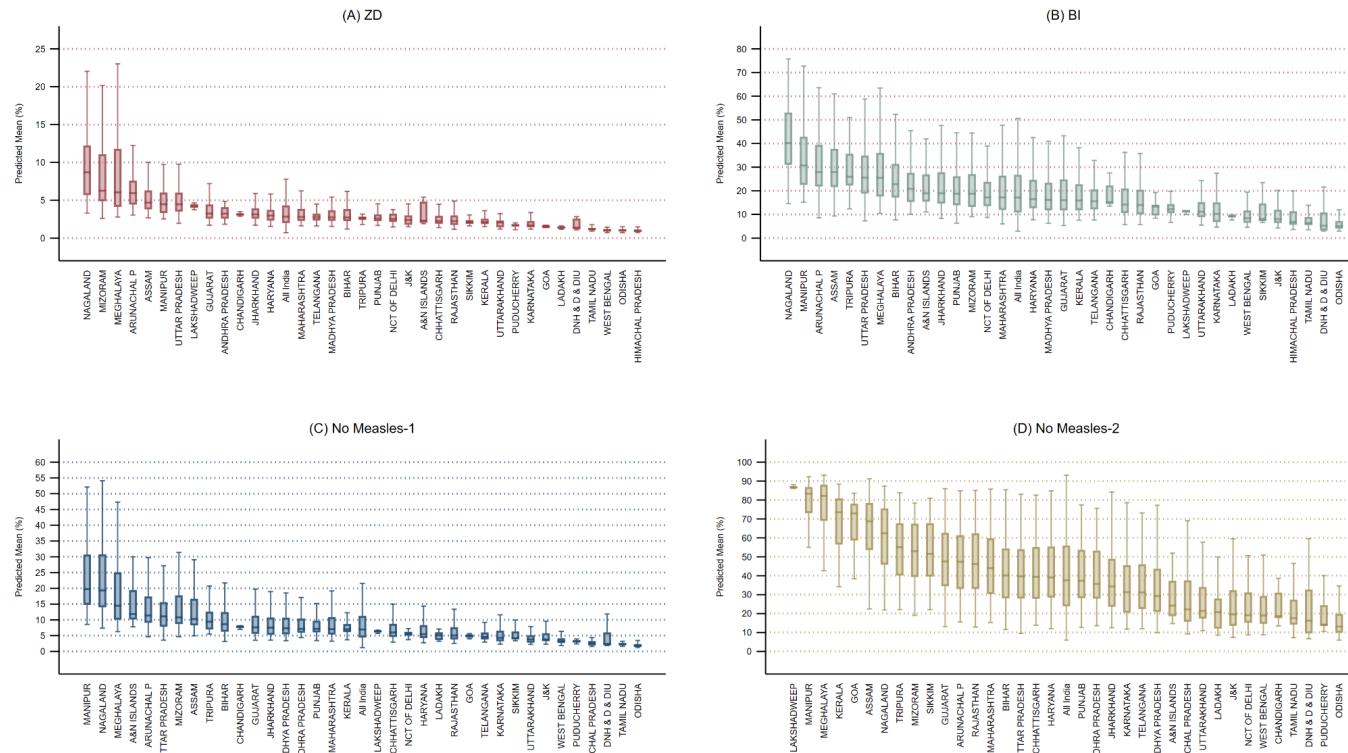
(A) ZD

(B) BI

(C) No Measles-1

(D) No Measles-2

Note: for each plot, the middle bar represents the median, the box represents the interquartile (25th to 75th percentile) range (IQR), and the upper (lower) whiskers are located at the 75th (25th) percentile plus (minus) 1.5 times the IQR. For panels A, B, and C, analyses include 21,771 clusters. For panel D, analyses include 22,068 clusters.

"ZD" - Zero Dose: All surviving children aged 12–23 months who did not receive the first dose of diphtheria, tetanus, and pertussis -containing vaccine.
"BI" - Basic incomplete: All surviving children aged 12–23 months who did not receive 8 basic vaccine doses recommended in the first year of life: 1 dose of Bacillus Calmette-Guérin (BCG) vaccine, 3 doses of pentavalent vaccine, 3 doses of oral polio vaccine, 1 dose of measles-rubella vaccine.
"No MR-1" - All surviving children aged 12-23 months who did not receive the first dose of measles-rubella-containing vaccine.
"No MR-2" - All surviving children aged 24-35 months who did not receive the second dose of measles-rubella-containing vaccine.

Sensitivity Analysis 1: Analysis excluding singleton clusters

Table S6: Cluster distribution by sample size per cluster, sub-optimally vaccinated children, India, National Family Health Survey (NFHS-5) 2019-2021[1]

PSU/ Cluster sample size	Number of Clusters (%)	
	Ages 12-23 months (No DPT/Penta 1 /BI /MR-1)	Ages 24 -36 months (MR-2)
All clusters (1 or > children)	21,771	22,068
2 or more children	12,216	12,420
4 or more children	10,820	11,071
5 or more children	4,936	4,915

[1] NFHS-5 clusters (primary sampling units - PSUs) comprised 150 to 300 households. In each NFHS-5 cluster, 22 households were sampled at random.

Table S7: Prevalence of child under-vaccination across states and Union Territories, India, National Family Health Survey (NFHS-5) 2019-2021[1](sample excluding singleton clusters)

State/UT[2]	# Districts	# Clusters	n (Sample)	ZD[3] (%)	95% CI	BI[4] (%)	95% CI	No MR-1[5] (%)	95% CI	# Clusters	n (Sample)	No MR-2[6] (%)	95% CI
All	707	12216	33881	6.4	[05.9; 06.7]	24.1	[23.4; 24.7]	12.6	[12.1; 13.1]	12420	34538	41.7	[40.9; 42.6]
Andaman & Nicobar	3	23	57	2.31	[0.67; 3.95]	18.03	[6.77; 29.29]	14.84	[4.37; 25.32]	13	34	18.89	[10.08; 27.70]
Andhra Pradesh	13	142	356	7.57	[4.47; 10.67]	29.53	[24.45; 34.61]	14.58	[11.13; 18.03]	139	327	44.62	[38.60; 50.63]
Arunachal Pradesh	20	273	702	13.67	[10.07; 17.27]	33.86	[29.09; 38.64]	19.02	[15.06; 22.99]	299	808	46.47	[42.22; 50.73]
Assam	33	561	1503	9.37	[7.49; 11.25]	34.47	[31.62; 37.32]	18.17	[15.59; 20.74]	612	1,689	65.98	[62.84; 69.13]
Bihar	38	1154	3585	6.23	[5.24; 7.21]	28.79	[27.00; 30.59]	14.39	[13.02; 15.77]	1121	3,525	44.69	[42.62; 46.75]
Chandigarh	1	7	15	5.46	[-5.80; 16.72]	13.24	[-2.58; 29.07]	13.24	[-2.58; 29.07]	7	19	20.85	[-0.74; 42.43]
Chhattisgarh	27	455	1204	4.65	[3.07; 6.24]	20.66	[17.27; 24.05]	10.24	[7.51; 12.97]	466	1,231	43.87	[39.46; 48.27]
Goa	2	17	37	3.88	[-3.59; 11.35]	21.25	[8.50; 33.99]	9.02	[-0.99; 19.02]	17	38	72.1	[53.00; 91.21]
Gujarat	33	527	1417	7.31	[5.56; 9.06]	23.69	[20.87; 26.51]	14.08	[11.65; 16.52]	532	1,417	49.55	[45.86; 53.24]
Haryana	22	379	1026	5.23	[3.81; 6.64]	23.51	[20.31; 26.71]	10.31	[8.13; 12.49]	362	1,026	44.3	[40.59; 48.01]
Himachal Pradesh	12	138	339	1.89	[-0.28; 4.06]	10.13	[6.38; 13.89]	4.63	[1.71; 7.56]	112	272	31.22	[22.79; 39.66]
Jammu & Kashmir	20	274	728	5.71	[3.77; 7.65]	15.94	[12.59; 19.29]	10	[7.30; 12.69]	346	913	25.29	[21.24; 29.35]
Jharkhand	24	559	1614	7.71	[5.77; 9.65]	26.83	[24.11; 29.56]	13.84	[11.54; 16.13]	536	1,524	40.03	[36.86; 43.19]
Karnataka	30	438	1158	4.44	[2.68; 6.21]	16.82	[13.49; 20.15]	9.39	[6.86; 11.92]	447	1,150	36.29	[32.40; 40.17]
Kerala	14	121	292	4.15	[1.62; 6.68]	19.07	[13.91; 24.23]	10.51	[6.54; 14.49]	147	349	65.38	[59.03; 71.74]
Ladakh	2	20	53	1.47	[-1.47; 4.42]	10.75	[-1.54; 23.05]	6.93	[0.00; 13.86]	33	78	24.48	[10.84; 38.12]
Lakshadweep	1	13	32	9.61	[2.59; 16.62]	16.38	[6.00; 26.76]	9.61	[2.59; 16.62]	10	30	90.24	[79.03; 101.45]

Madhya Pradesh	51	898	2446	5.59	[4.53; 6.65]	22.17	[19.94; 24.40]	11.49	[10.07; 12.90]	885	2,348	34.92	[32.75; 37.09]
Maharashtra	36	518	1324	8.14	[4.77; 11.51]	27.33	[23.61; 31.04]	15.71	[12.00; 19.42]	502	1,290	49.77	[44.53; 55.01]
Manipur	9	174	456	7.13	[4.51; 9.74]	32.35	[26.44; 38.27]	23.42	[18.39; 28.45]	174	483	75.99	[70.50; 81.49]
Meghalaya	11	258	1034	15.84	[12.27; 19.41]	35.38	[31.21; 39.55]	27.15	[23.24; 31.06]	288	1,113	73.86	[69.51; 78.21]
Mizoram	8	145	393	15.17	[9.47; 20.88]	29.6	[20.70; 38.50]	19.79	[12.21; 27.37]	129	340	56.15	[50.13; 62.17]
Nagaland	11	152	408	17.58	[11.96; 23.20]	45.97	[38.89; 53.04]	28.74	[22.50; 34.97]	149	430	55.62	[49.60; 61.64]
D&N Haveli; D & Diu	3	46	110	1.82	[-0.01; 3.65]	4.27	[0.88; 7.66]	2.63	[-0.52; 5.78]	39	108	14.23	[6.40; 22.07]
NCT of Delhi	11	159	428	6.32	[3.31; 9.33]	24.19	[19.30; 29.08]	9.57	[6.39; 12.74]	165	425	24.78	[19.49; 30.07]
Odisha	30	426	1110	2.89	[1.67; 4.10]	10.46	[8.05; 12.87]	4.52	[2.78; 6.27]	453	1,203	21.6	[18.18; 25.01]
Puducherry	4	38	97	0.27	[-0.13; 0.68]	11.37	[1.23; 21.51]	3.57	[-1.25; 8.39]	39	89	12	[4.04; 19.97]
Punjab	22	294	744	6.42	[4.30; 8.54]	25.4	[21.61; 29.18]	13.16	[10.26; 16.05]	310	779	43.2	[39.12; 47.28]
Rajasthan	33	723	2091	4.76	[3.59; 5.92]	19.14	[17.09; 21.19]	8.65	[7.11; 10.18]	803	2,358	48.26	[45.34; 51.17]
Sikkim	4	27	62	8.17	[-0.72; 17.06]	21.1	[1.55; 40.66]	16.19	[-1.91; 34.29]	24	62	53.47	[41.05; 65.89]
Tamil Nadu	32	321	777	2.56	[1.36; 3.76]	9.86	[7.32; 12.41]	4.37	[2.59; 6.15]	319	756	24.51	[20.84; 28.18]
Telangana	31	410	1037	6.35	[4.20; 8.49]	18.92	[15.57; 22.28]	8.42	[6.04; 10.79]	380	916	36.72	[31.85; 41.59]
Tripura	8	111	275	4.69	[2.12; 7.26]	29.4	[24.40; 34.40]	12.08	[8.47; 15.68]	101	241	53.33	[46.19; 60.46]
Uttar Pradesh	75	1889	5614	9.07	[8.12; 10.02]	30.62	[29.16; 32.09]	17.05	[15.82; 18.27]	1950	5,836	41.36	[39.80; 42.92]
Uttarakhand	13	207	517	4.71	[2.27; 7.16]	19.01	[13.39; 24.63]	9.59	[5.98; 13.19]	204	521	30.8	[24.90; 36.71]
West Bengal	20	319	840	1.8	[0.73; 2.87]	11.72	[9.28; 14.16]	5.17	[3.42; 6.92]	307	810	28.22	[23.89; 32.55]

Note: for each plot, the middle bar represents the median, the box represents the interquartile (25th to 75th percentile) range (IQR), and the upper (lower) whiskers are located at the 75th (25th) percentile plus (minus) 1.5 times the IQR. For panels A, B, and C, analyses include 12,216 clusters. For panel D, analyses include 12,420 clusters.

"ZD" - Zero Dose: All surviving children aged 12–23 months who did not receive the first dose of diphtheria, tetanus, and pertussis -containing vaccine.
"BI" - Basic incomplete: All surviving children aged 12–23 months who did not receive 8 basic vaccine doses recommended in the first year of life: 1 dose of Bacillus Calmette-Guérin (BCG) vaccine, 3 doses of pentavalent vaccine, 3 doses of oral polio vaccine, 1 dose of measles-rubella vaccine.

"No MR-1" - All surviving children aged 12-23 months who did not receive the first dose of measles-rubella-containing vaccine.

"No MR-2" - All surviving children aged 24-35 months who did not receive the second dose of measles-rubella-containing accine.

Figure S8. Geographic variance partitioning (%) by clusters, districts and states for four indicators of child under-vaccination, National Family Health Survey 2019-21 (NFHS-5), India (sample excluding singleton clusters)

Analyses for Zero Dose, BI and No MR-1 include 12,216 clusters. For No MR-2, analyses include 12,420 clusters.

"Zero Dose" - All surviving children aged 12–23 months who did not receive the first dose of diphtheria, tetanus, and pertussis -containing vaccine.
"BI" - Basic incomplete: All surviving children aged 12–23 months who did not receive 8 basic vaccine doses recommended in the first year of life: 1 dose of Bacillus Calmette-Guérin (BCG) vaccine, 3 doses of pentavalent vaccine, 3 doses of oral polio vaccine, 1 dose of measles-rubella vaccine.
"No MR-1" - All surviving children aged 12-23 months who did not receive the first dose of measles-rubella-containing vaccine.
"No MR-2" - All surviving children aged 24-35 months who did not receive the second dose of measles-rubella-containing vaccine.

Table S8. Geographic variance partitioning for four indicators of child under-vaccination, NFHS-5, India (sample excluding singleton clusters)

Overall	ZD	BI-	No MR-1	No MR-2
Variance Partitioning				
State	0.411	0.355	0.421	0.793
	(0.135)	*(0.109)*	*(0.128)*	*(0.238)*
District	0.229	0.274	0.310	0.293
	(0.039)	*(0.029)*	*(0.036)*	*(0.027)*
Cluster	1.428	0.803	0.989	1.141
	(0.109)	*(0.050)*	*(0.071)*	*(0.057)*

Note: Standard errors in parentheses

Analyses for Zero Dose, BI and No MR-1 include 12,216 clusters. For No MR-2, analyses include 12,420 clusters.

"Zero-dose" - All surviving children aged 12–23 months who did not receive the first dose of diphtheria, tetanus, and pertussis -containing vaccine.
"BI " - All surviving children aged 12–23 months who did not receive 8 vaccine doses recommended in the first year of life: 1 dose of Bacillus Calmette-Guérin (BCG) vaccine, 3 doses of pentavalent vaccine, 3 doses of oral polio vaccine, 1 dose of measles-rubella vaccine.
"No MR-1" - All surviving children aged 12-23 months who did not receive the first dose of measles-rubella-containing vaccine.
"No MR-2" - All surviving children aged 24-35 months who did not receive the second dose of measles-rubella-containing vaccine.

Figure S9: Maps of district-level prevalence and within-district small-area variations in the prevalence of zero-dose (ZD) children and children with basic immunisation incomplete (BI), National Family Health Survey 2019-21, India (sample excluding singleton clusters)
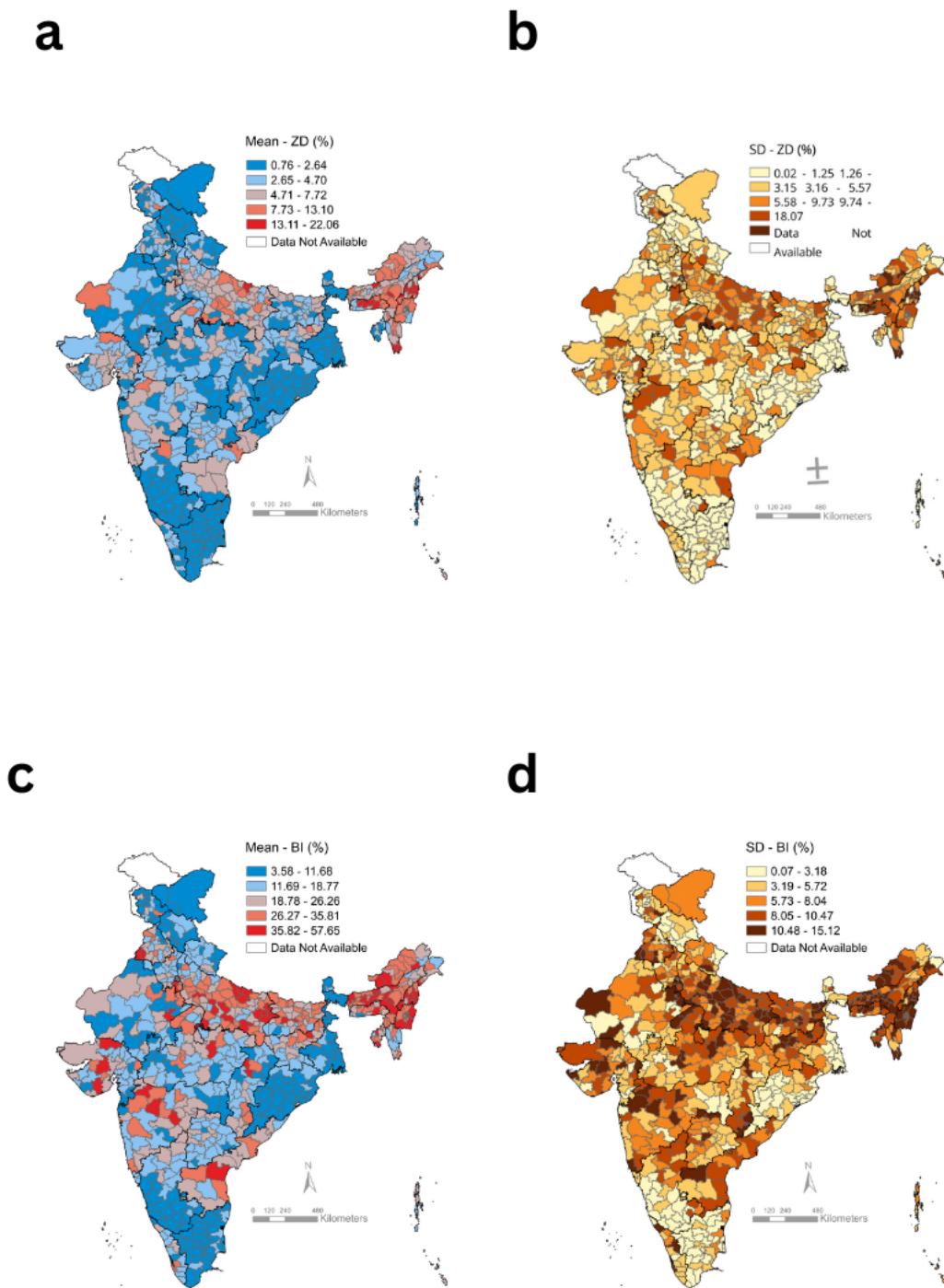
(a) District-level mean and (b) within-district between-cluster standard deviation (SD) for zero-dose child prevalence; (c) District-level mean and (d) within-district between-cluster SD for child prevalence with basic immunisation incomplete.

Figure S10: Maps of district-level prevalence and within-district small-area variations in the prevalence of prevalence of non-receipt of measles-rubella (MR) vaccination, National Family Health Survey 2019-21, India (sample excluding singleton clusters)
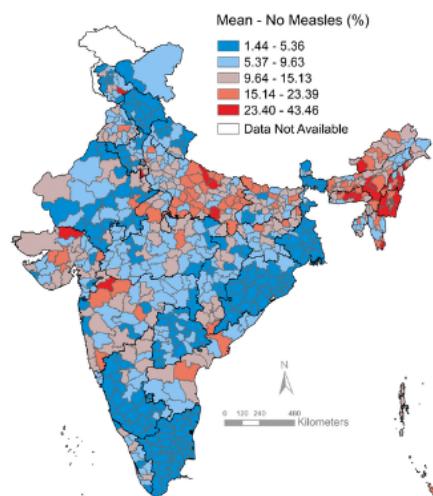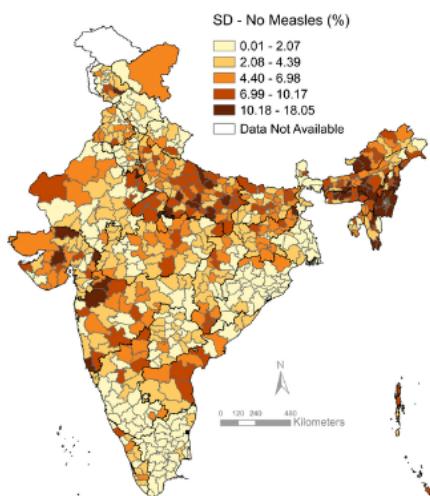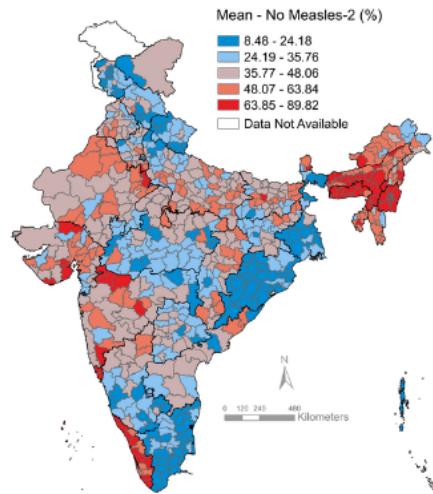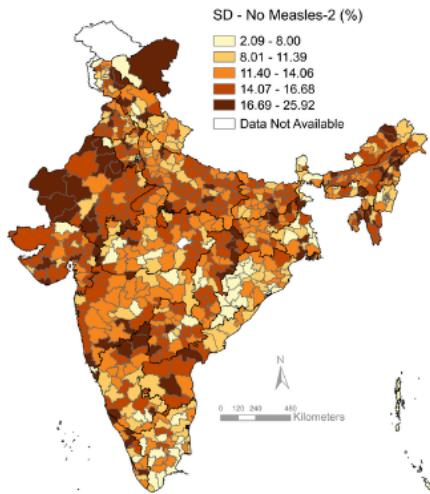
(a) District-level prevalence and (b) within-district between-cluster standard deviation (SD) for non-receipt of MR first dose; (c) District-level prevalence and (d) within-district between-cluster SD for non-receipt of MR second dose.

Figure S11. Box plots of predicted small-area cluster[1] mean prevalence for four indicators of under-vaccination across states and Union Territories, National Family Health Survey 2019-21, India (sample excluding singleton clusters)

Note: for each plot, the middle bar represents the median, the box represents the interquartile (25th to 75th percentile) range (IQR), and the upper (lower) whiskers are located at the 75th (25th) percentile plus (minus) 1.5 times the IQR. For panels A, B, and C, analyses include 12,216 clusters. For panel D, analyses include 12,420 clusters.

"ZD" - Zero Dose: All surviving children aged 12–23 months who did not receive the first dose of diphtheria, tetanus, and pertussis -containing vaccine.
"BI" - Basic incomplete: All surviving children aged 12–23 months who did not receive 8 basic vaccine doses recommended in the first year of life: 1 dose of Bacillus Calmette-Guérin (BCG) vaccine, 3 doses of pentavalent vaccine, 3 doses of oral polio vaccine, 1 dose of measles-rubella vaccine.
"No MR-1" - All surviving children aged 12-23 months who did not receive the first dose of measles-rubella-containing vaccine.
"No MR-2" - All surviving children aged 24-35 months who did not receive the second dose of measles-rubella-containing vaccine.

Figure S12. Box plots of predicted small-area cluster[1] mean prevalence for four indicators of under-vaccination across states and Union Territories, National Family Health Survey 2019-21, India (sample excluding singleton clusters, no outliers)

Note: for each plot, the middle bar represents the median, the box represents the interquartile (25th to 75th percentile) range (IQR), and the upper (lower) whiskers are located at the 75th (25th) percentile plus (minus) 1.5 times the IQR. For panels A, B, and C, analyses include 12,216 clusters. For panel D, analyses include 12,420 clusters.

"ZD" - Zero Dose: All surviving children aged 12–23 months who did not receive the first dose of diphtheria, tetanus, and pertussis -containing vaccine.
"BI" - Basic incomplete: All surviving children aged 12–23 months who did not receive 8 basic vaccine doses recommended in the first year of life: 1 dose of Bacillus Calmette-Guérin (BCG) vaccine, 3 doses of pentavalent vaccine, 3 doses of oral polio vaccine, 1 dose of measles-rubella vaccine.
"No MR-1" - All surviving children aged 12-23 months who did not receive the first dose of measles-rubella-containing vaccine.
"No MR-2" - All surviving children aged 24-35 months who did not receive the second dose of measles-rubella-containing vaccine.

Table S9. Geographic variance partitioning for four indicators of child under-vaccination, NFHS-5, India (sample with 5 or more children per cluster)

Overall	ZD	BI-	No MR-1	No MR-2
Variance Partitioning				
State	0.198	0.158	0.136	0.577
	(0.161)	(0.094)	(0.157)	(0.029)
District	0.010	0.253	0.275	0.381
	(0.013)	(0.090)	(0.137)	(0.380)
Cluster	1.398	0.686	1.039	1.091
	(0.247)	(0.126)	(0.174)	(0.144)

Note: Standard errors in parentheses

Analyses for Zero Dose, BI and No MR-1 include 4,936 clusters. For No MR-2, analyses include 4,915 clusters.

"Zero-dose" - All surviving children aged 12–23 months who did not receive the first dose of diphtheria, tetanus, and pertussis -containing vaccine.
"BI " - All surviving children aged 12–23 months who did not receive 8 vaccine doses recommended in the first year of life: 1 dose of Bacillus Calmette-Guérin (BCG) vaccine, 3 doses of pentavalent vaccine, 3 doses of oral polio vaccine, 1 dose of measles-rubella vaccine.
"No MR-1" - All surviving children aged 12-23 months who did not receive the first dose of measles-rubella-containing vaccine.
"No MR-2" - All surviving children aged 24-35 months who did not receive the second dose of measles-rubella-containing vaccine.

Figure S13. Box plots of predicted small-area cluster[1] mean prevalence for four indicators of under-vaccination across states and Union Territories, National Family Health Survey 2019-21, India (sample including clusters with 5 or more children)
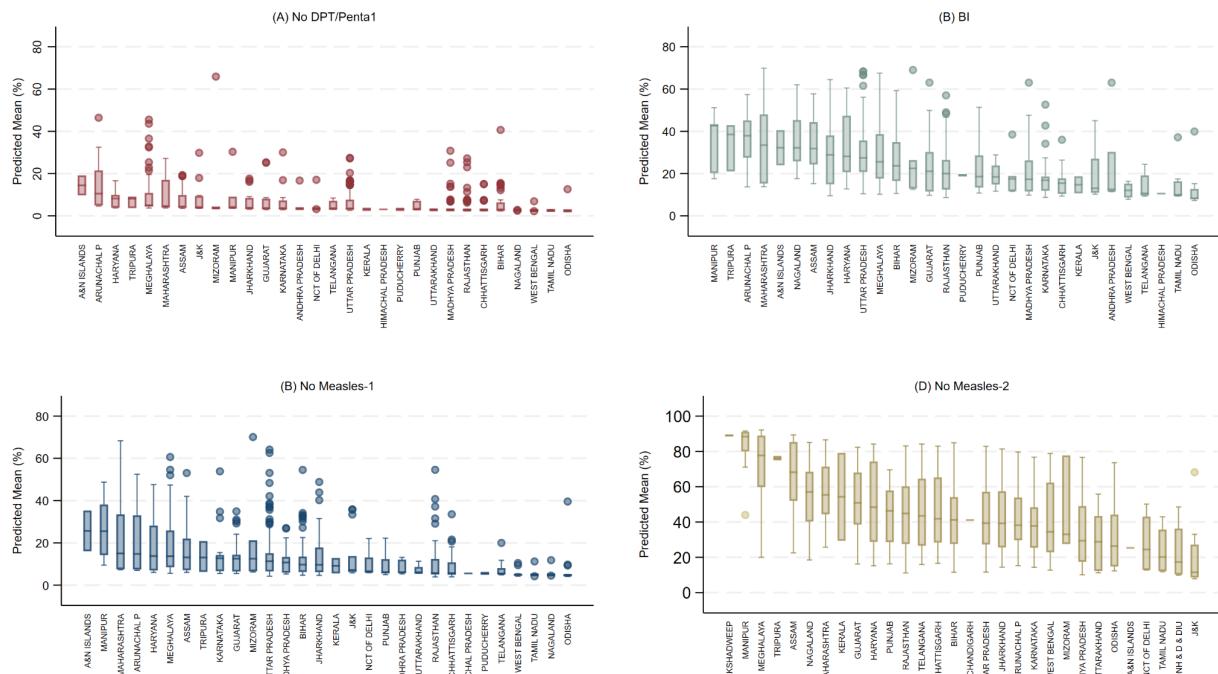
Note: for each plot, the middle bar represents the median, the box represents the interquartile (25th to 75th percentile) range (IQR), and the upper (lower) whiskers are located at the 75th (25th) percentile plus (minus) 1.5 times the IQR. For panels A, B, and C, analyses include 4,936 clusters. For panel D, analyses include 4,915 clusters.

"ZD" - Zero Dose: All surviving children aged 12–23 months who did not receive the first dose of diphtheria, tetanus, and pertussis -containing vaccine.
"BI" - Basic incomplete: All surviving children aged 12–23 months who did not receive 8 basic vaccine doses recommended in the first year of life: 1 dose of Bacillus Calmette-Guérin (BCG) vaccine, 3 doses of pentavalent vaccine, 3 doses of oral polio vaccine, 1 dose of measles-rubella vaccine.
"No MR-1" - All surviving children aged 12-23 months who did not receive the first dose of measles-rubella-containing vaccine.
"No MR-2" - All surviving children aged 24-35 months who did not receive the second dose of measles-rubella-containing vaccine.

Sensitivity Analysis 2: Decomposition of the Basic Immunisation Incomplete indicator

Table S10. Geographic variance partitioning for failure to receive DTP3/PENTA3 and OPV3, NFHS-5, India

	No DPT/Penta3		No OPV3	
Full Sample (All Clusters	Mean	SD	Mean	SD
State	0.40 (26%)	0.121	0.33 (22%)	0.099
District	0.23 (15%)	0.027	0.26 (18%)	0.026
Cluster	0.92 (59%)	0.079	0.88 (60%)	0.058
Sub-sample (clusters excluding singletons)				
State	0.40 (25%)	0.129	0.34 (23%)	0.105
District	0.27 (17%)	0.034	0.26 (18%)	0.029
Cluster	0.95 (59%)	0.076	0.87 (59%)	0.055

Note: Standard errors in parentheses

"DTP3/PENTA3" - All surviving children aged 12–23 months who did not receive three doses of diphtheria, tetanus, and pertussis -containing vaccine.
"OPV3" - All surviving children aged 12–23 months who did not receive three doses of oral polio vaccine first dose of diphtheria, tetanus, and pertussis -containing vaccine.

Figure S14. Maps of district-level mean prevalence and within-district small-area variations in the prevalence of children without three doses of oral polio vaccine, NFHS-5, India (sample: all clusters)
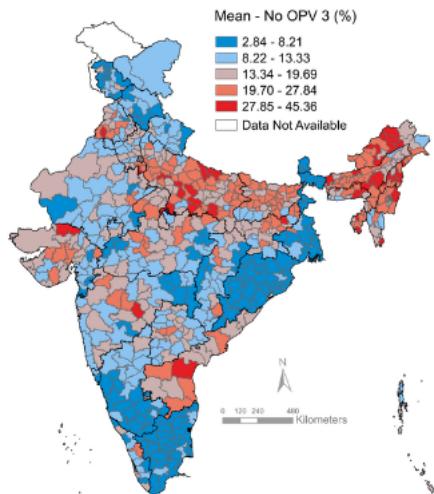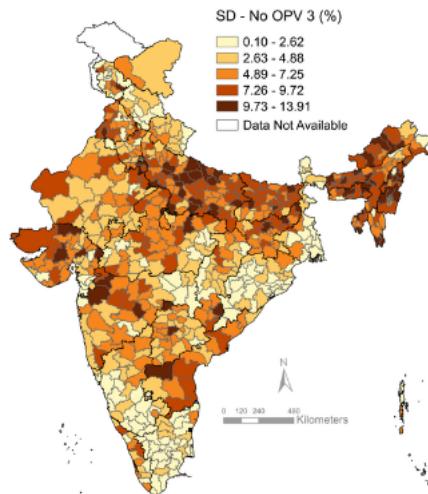

(a) District-level prevalence and (b) within-district between-cluster standard deviation (SD) for non-receipt of three doses of oral polio vaccine.

"OPV3" - All surviving children aged 12–23 months who did not receive three doses of oral polio vaccine first dose of diphtheria, tetanus, and pertussis -containing vaccine.

Analyses include all 21,771 clusters.

Figure S15. Maps of district-level mean prevalence and within-district small-area variations in the prevalence of children without three doses of diphtheria-tetanus-pertussis-containing vaccine, NFHS-5, India (sample: all clusters)
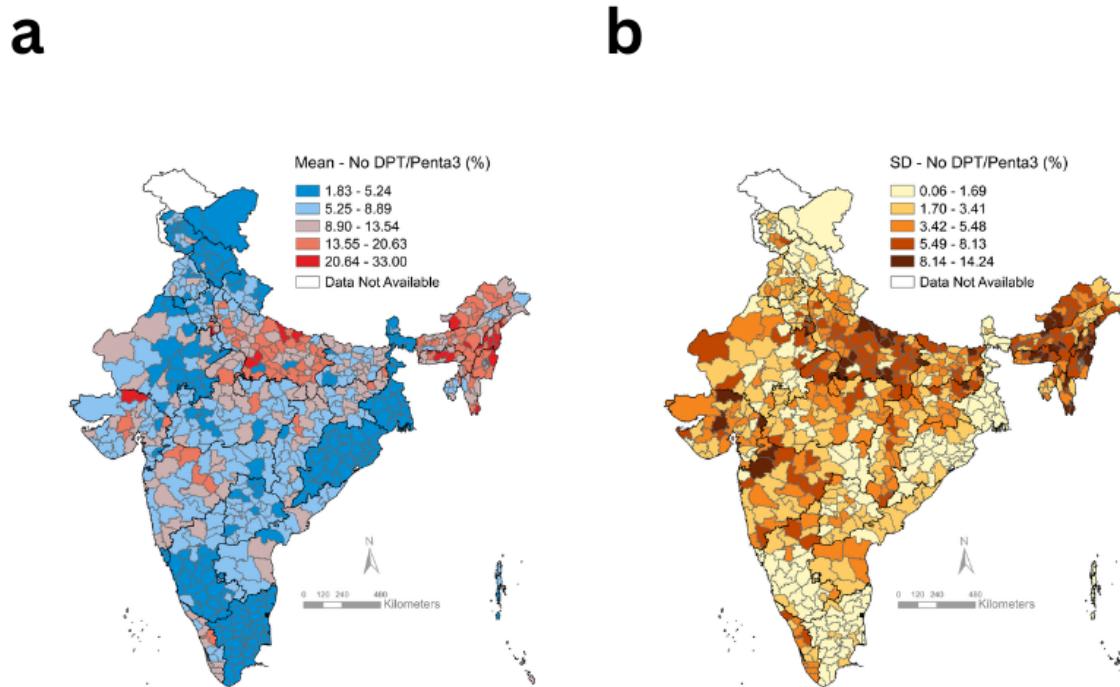
(a) District-level prevalence and (b) within-district between-cluster standard deviation (SD) for non-receipt of three doses of DPT3/ PENTA3 vaccine.

"DTP3/PENTA3" - All surviving children aged 12–23 months who did not receive three doses of diphtheria, tetanus, and pertussis -containing vaccine.

Analyses include all 21,771 clusters.

Figure S16. Box plots of predicted small-area cluster[1] mean prevalence of children without three doses of oral polio vaccine (OPV3) across states and Union Territories, National Family Health Survey 2019-21, India (sample: all clusters)
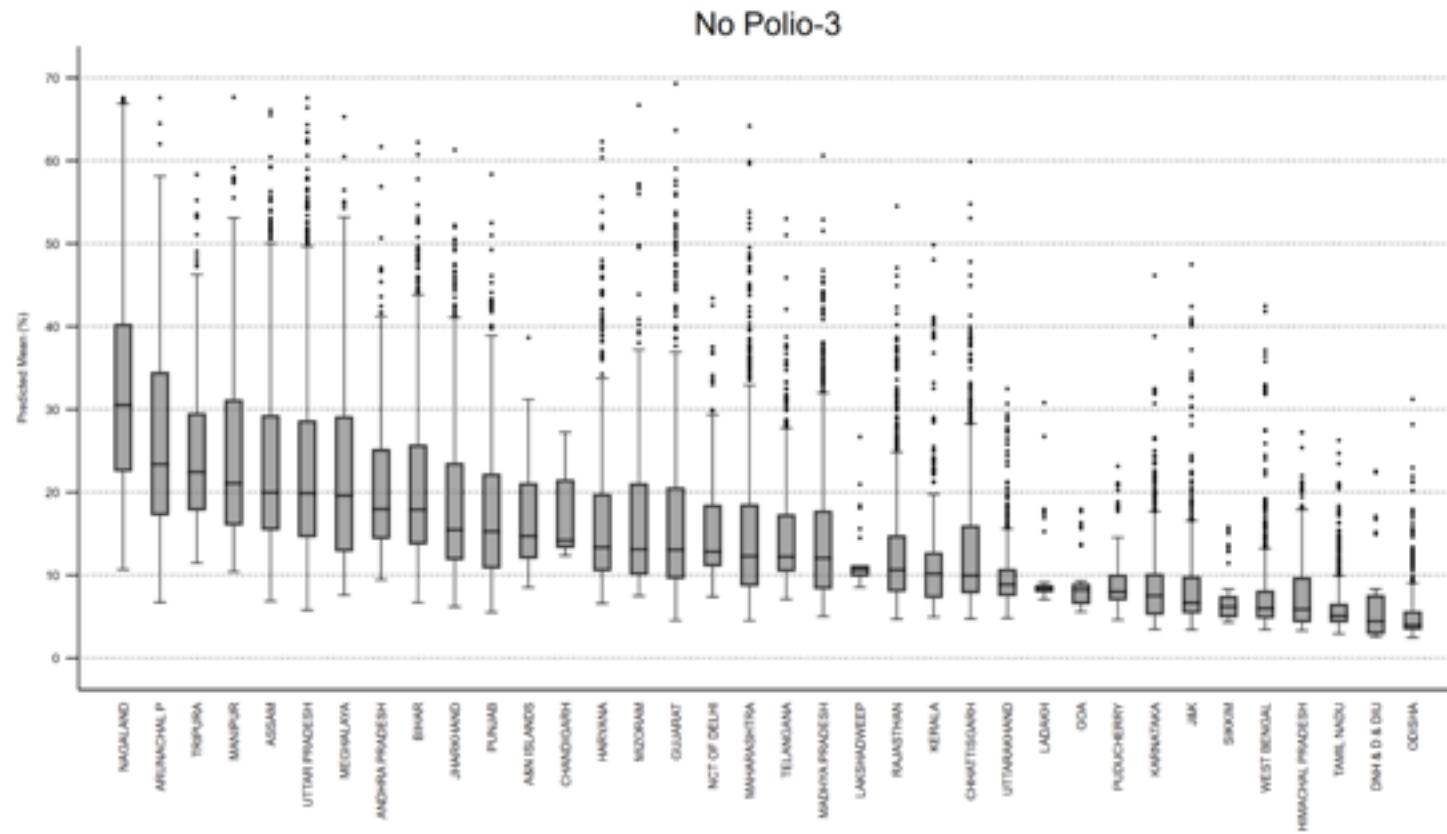
Note: for each plot, the middle bar represents the median, the box represents the interquartile (25th to 75th percentile) range (IQR), and the upper (lower) whiskers are located at the 75th (25th) percentile plus (minus) 1.5 times the IQR. Analyses include all 21,771 clusters.

"OPV3" - All surviving children aged 12–23 months who did not receive three doses of oral polio vaccine .

Figure S17. Box plots of predicted small-area cluster[1] mean prevalence of children without three doses of oral polio vaccine (OPV3) across states and Union Territories, National Family Health Survey 2019-21, India (sample excluding singleton clusters)

No Polio-3
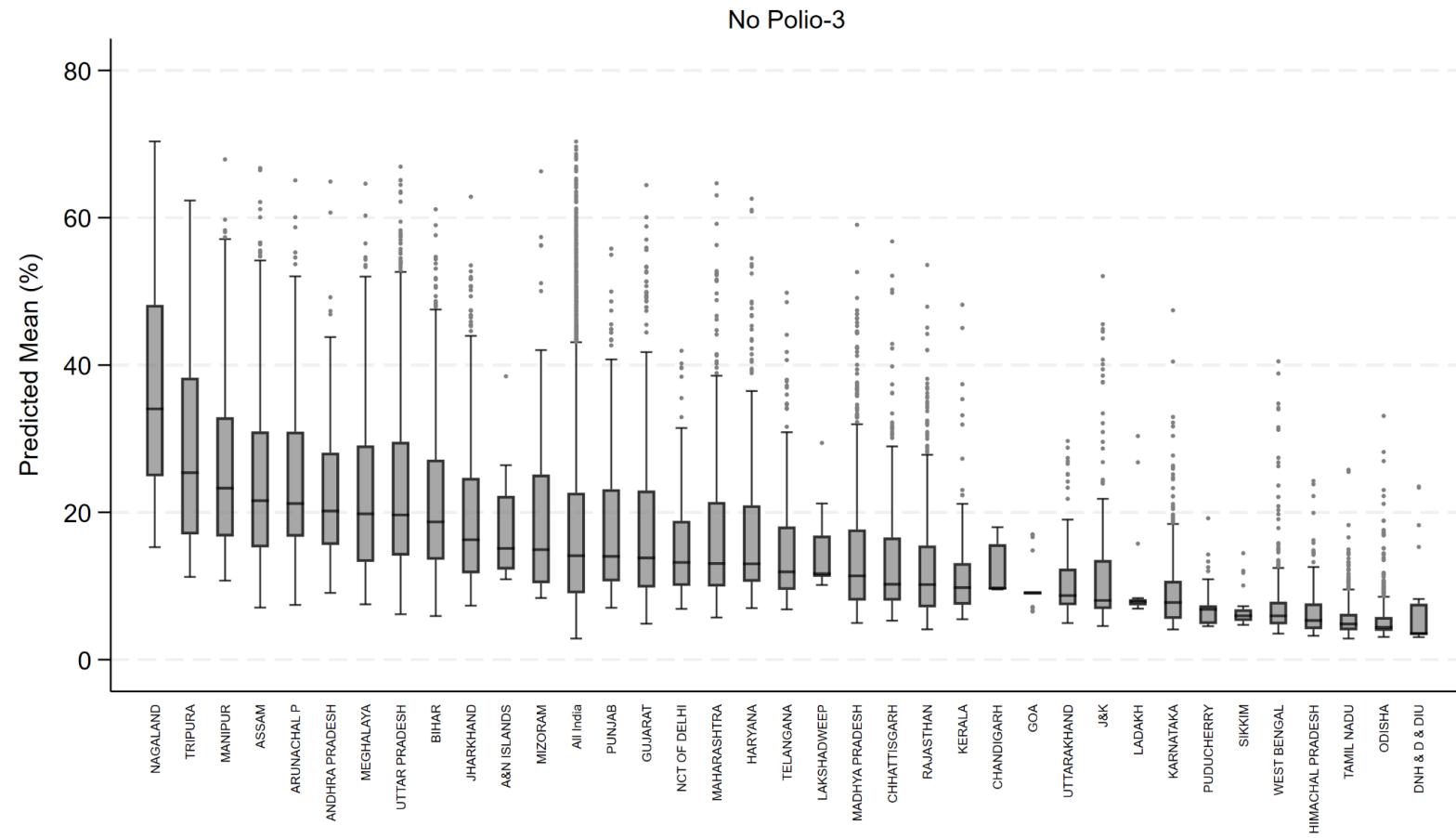
Note: for each plot, the middle bar represents the median, the box represents the interquartile (25th to 75th percentile) range (IQR), and the upper (lower) whiskers are located at the 75th (25th) percentile plus (minus) 1.5 times the IQR. Analyses include 12,212 clusters.

"OPV3" - All surviving children aged 12–23 months who did not receive three doses of oral polio vaccine.

Figure S18. Box plots of predicted small-area cluster[1] mean prevalence of children without three doses of diphtheria-tetanus-pertussis-containing vaccine across states and Union Territories, National Family Health Survey 2019-21, India (sample: all clusters)

(D) No DPT/Penta3
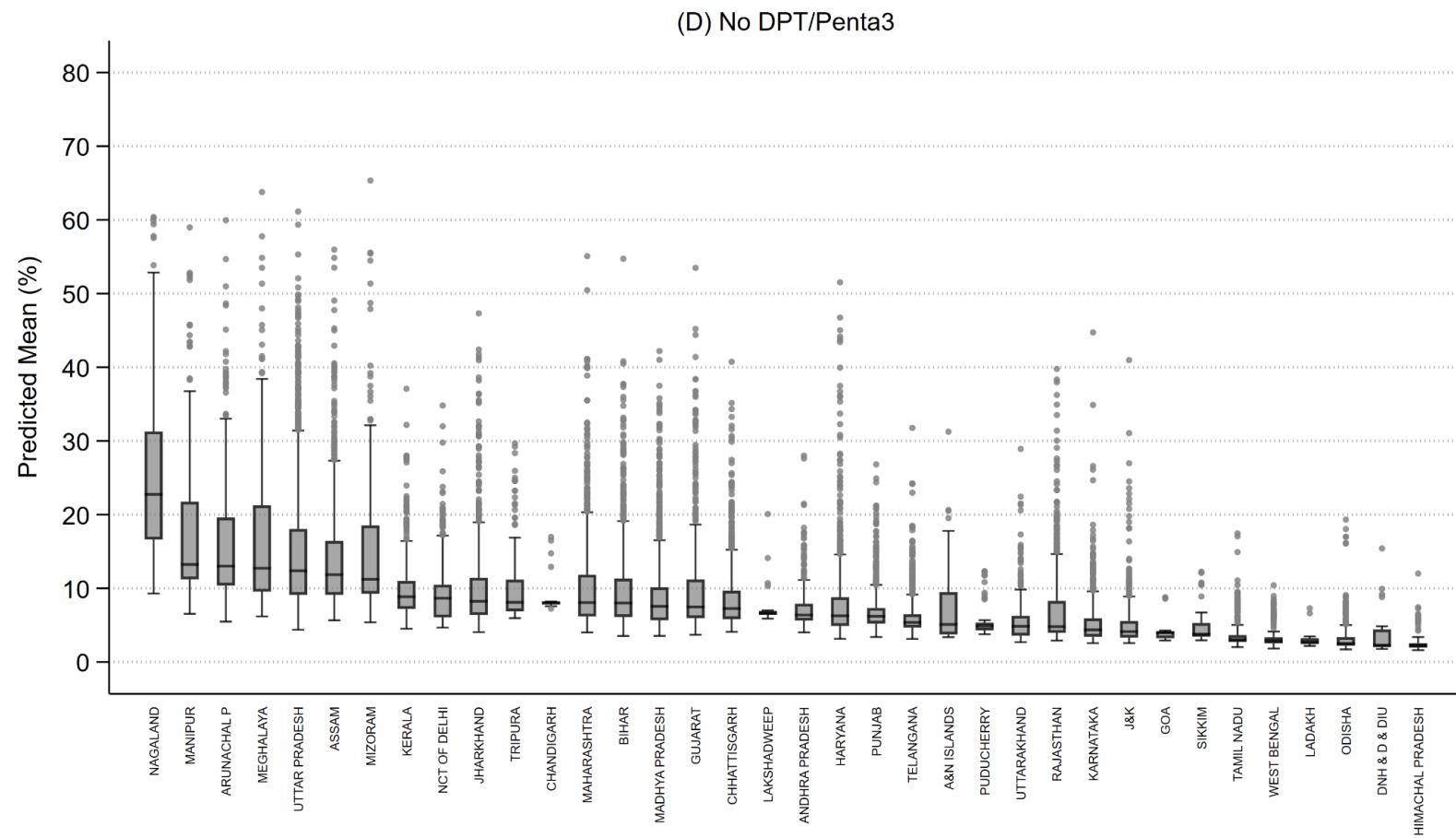
Note: for each plot, the middle bar represents the median, the box represents the interquartile (25th to 75th percentile) range (IQR), and the upper (lower) whiskers are located at the 75th (25th) percentile plus (minus) 1.5 times the IQR. Analyses include all 21,771 clusters.

"DTP3/PENTA3" - All surviving children aged 12–23 months who did not receive three doses of diphtheria, tetanus, and pertussis -containing vaccine.

Figure S19. Box plots of predicted small-area cluster[1] mean prevalence of children without three doses of diphtheria-tetanus-pertussis-containing vaccine across states and Union Territories, National Family Health Survey 2019-21, India (sample excluding singleton clusters)

(D) No DPT/Penta-3
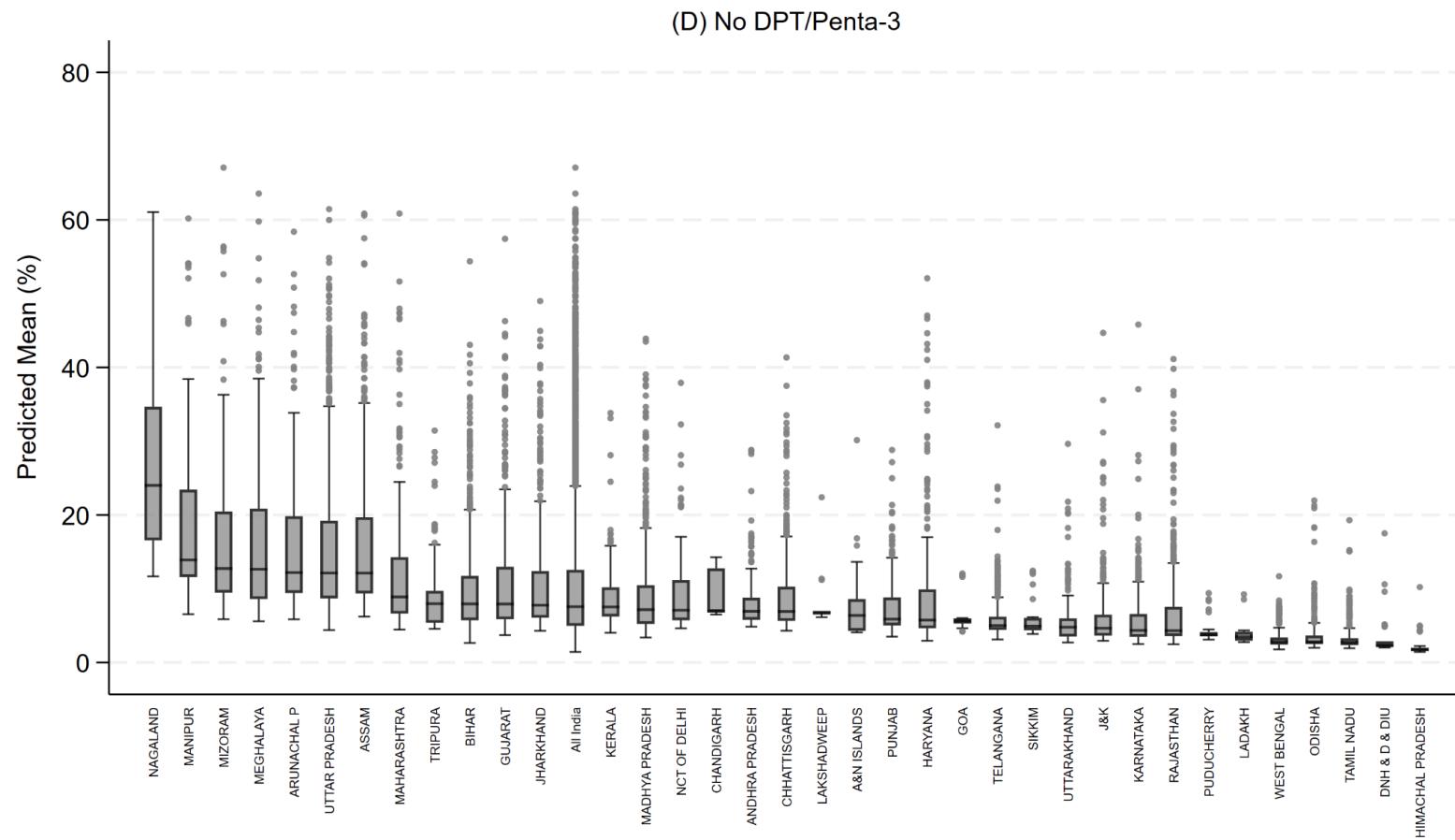
Note: for each plot, the middle bar represents the median, the box represents the interquartile (25th to 75th percentile) range (IQR), and the upper (lower) whiskers are located at the 75th (25th) percentile plus (minus) 1.5 times the IQR. Analyses include 12,216 clusters.

"DTP3/PENTA3" - All surviving children aged 12–23 months who did not receive three doses of diphtheria, tetanus, and pertussis -containing vaccine.

Sensitivity Analysis 3: Child age

Table S11. Prevalence of under-vaccination outcomes among children by age groups, NFHS-5, India

Variable	Mean (%) - 12-23 Months	Mean (%) - 24-35 months	Mean (%) - 12-35 Months
ZD	6.10	6.69	6.41
BI	23.40	24.37	23.90
No MR-1	12.15	11.62	11.88
No DPT/Penta3	12.09	11.30	11.69
No OPV-3	19.54	20.47	20.01

Note: Analyses included 43,436 children 12 to 23 months and 44,186 children 12-35 months.

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