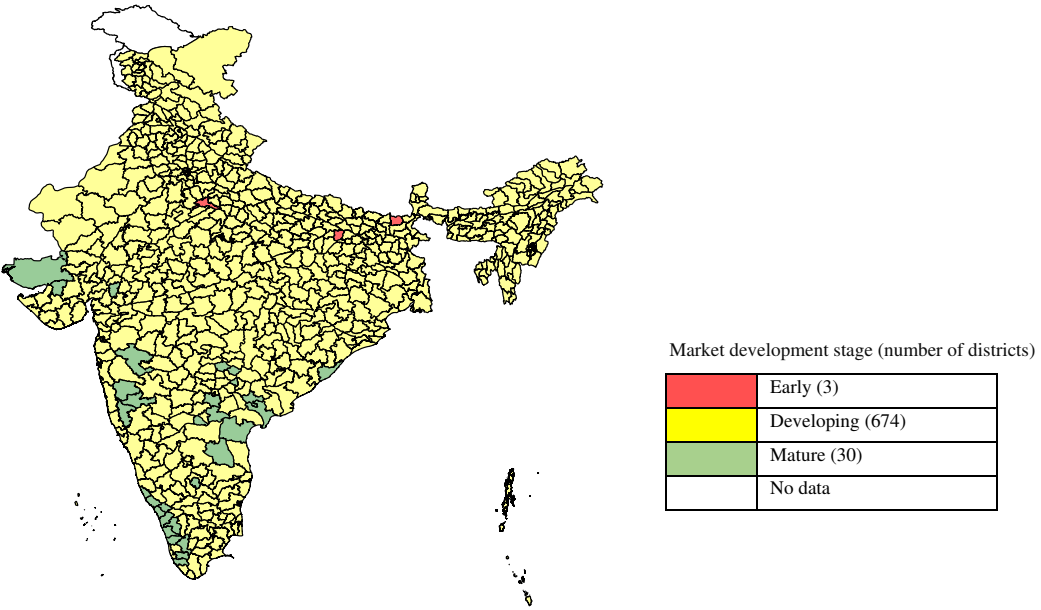


Supplementary appendix

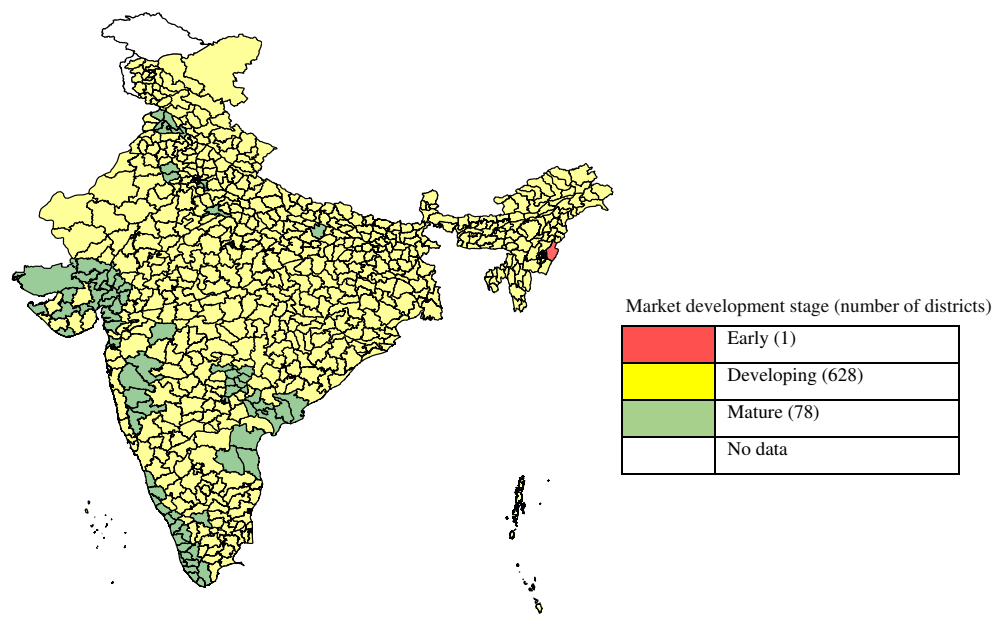
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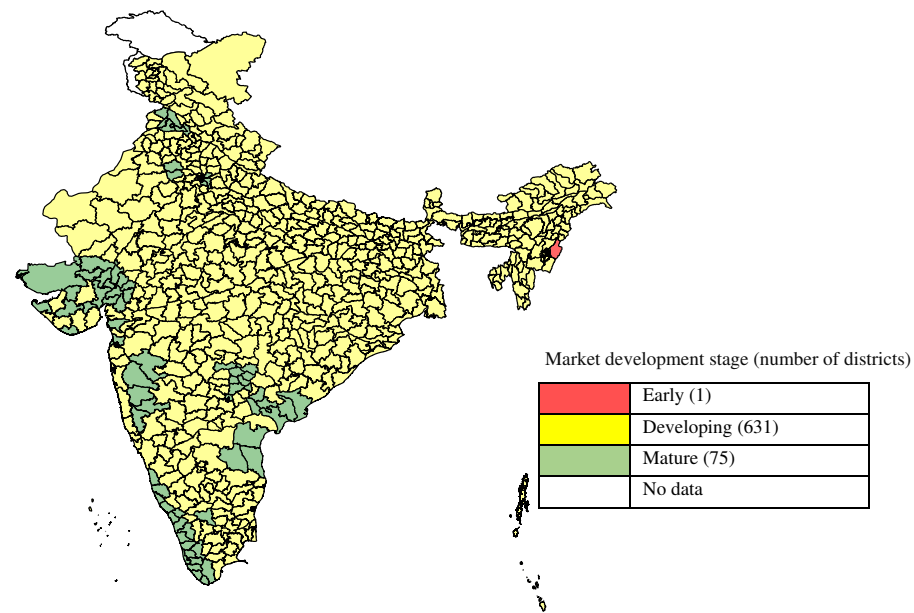
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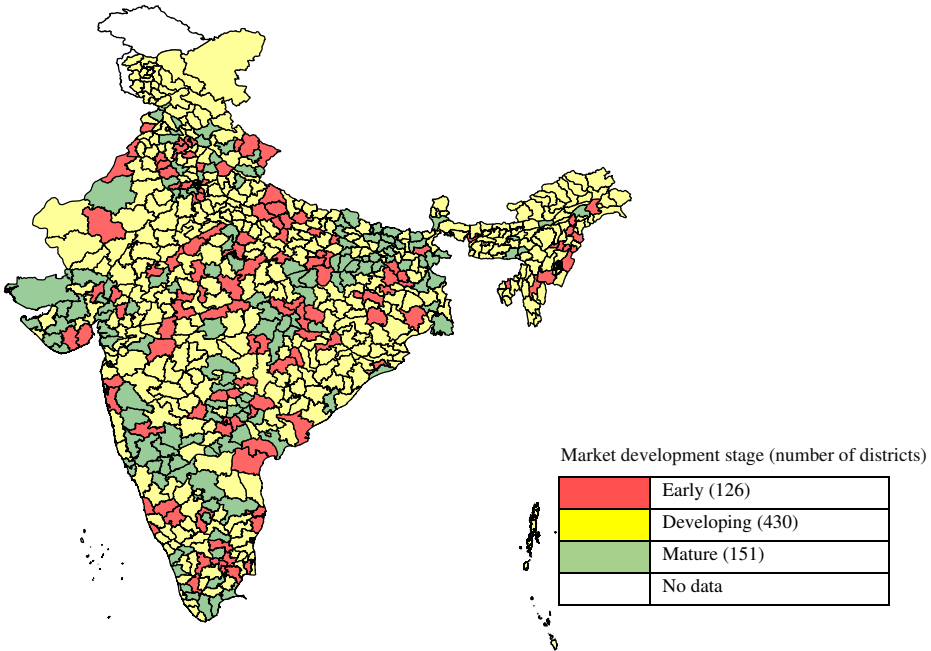
Supplementary Figure S1: Districts of India at different level of market development stage for four or more ANC, 2019-21



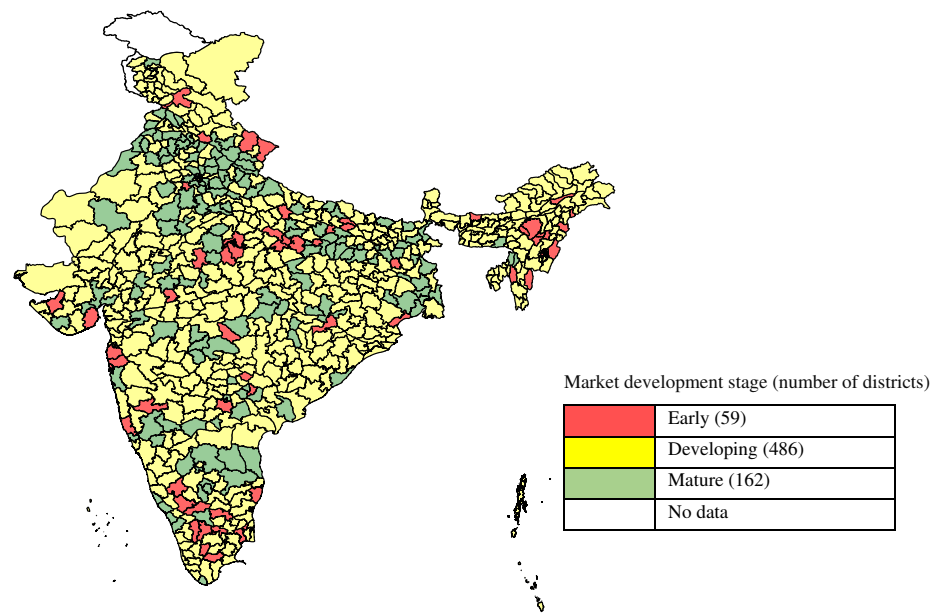
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Supplementary Figure S5: Districts of India at different level of market development stage for care seeking for diarrhoea among children, 2019-21

Supplementary Table S1: Association of covariates with the outcome variables (NFHS 2019-21)

Covariates	Degrees of Freedom (df)	Chi-Square Statistic (χ^2)	P-Value
Care seeking for ANC			
Residence	2	4.0e+03	0.000
Age of women	4	319.92	0.000
Mother's education	4	7.2e+03	0.000
Wealth Index	8	1.3e+04	0.000
Institutional delivery			
Residence	2	7.2e+03	0.000
Age of women	4	1.0e+03	0.000
Mother's education	4	1.9e+04	0.000
Wealth Index	8	3.2e+04	0.000
Care seeking for PNC			
Residence	1	4.3e+03	0.000
Age of women	2	386.73	0.000
Mother's education	2	8.6e+03	0.000
Wealth Index	4	1.6e+04	0.000
Care seeking for ARI			
Residence	2	12.77	0.002
Age of women	4	11.95	0.018
Mother's education	4	34.81	0.000
Wealth Index	8	78.54	0.000
Care seeking for diarrhea			
Residence	2	22.02	0.000
Age of women	4	91.94	0.000
Mother's education	4	62.07	0.000
Wealth Index	8	97.66	0.000

Supplementary Table S2: Classification criteria of districts according to the stages of market development for MCH indicators

Stages of market development for MCH services	Early	Developing	Mature
Four or more ANC visits (4ANC)	4ANC <45%	4ANC between 45-70% or >50% 4ANC availed from public facilities.	4ANC>70% with <50% 4ANC availed from public facilities
Institutional delivery (POD)	POD <65%	POD between 65-85% or >50% POD from public facilities	POD>85% with <50% POD from public facilities
PNC checkup for mother (PNC)	PNC <60%	PNC between 60-80% or >50% PNC availed from public facilities.	PNC>80% with <50% PNC availed from public facilities
Treatment seeking for ARI (ARI)	ARI <40%	ARI between 40-70% or >50% treatment sought from public facilities.	ARI>70% with <50% treatment sought from public facilities
Treatment seeking for diarrhea (DIR)	DIR<60%	DIR between 60-80% or >50% treatment sought from public facilities	DIR>80% with <50% treatment sought from public facilities

Supplementary Table S3 (a): Trends in utilization of maternal healthcare services by public, private, and other health facilities across selected background characteristics in India, 2005-2021

	2005-06				2015-16				2019-21			
Four or more ANC visits (%)	Public	Private	Others	Total	Public	Private	Others	Total	Public	Private	Others	Total
Residence												
Urban	32.1	58.4	9.5	62.4	40.8	42.5	16.8	66.4	46.8	31.7	21.4	68.6
Rural	41.1	42.2	16.7	27.7	54.2	24.7	21.1	44.8	61.2	15.9	22.9	54.5
Age of women												
15-19 years	39.5	41.6	19.0	30.0	54.3	22.5	23.2	54.1	58.1	12.8	29.1	60.1
20-29 years	36.9	49.6	13.5	40.1	49.6	30.4	20.0	53.0	57.3	19.5	23.2	58.5
30+ years	36.9	51.3	11.8	31.1	46.6	36.0	17.4	46.3	54.1	25.9	20.0	58.4
Mother's education (in years of schooling)												
Up to 5 years	49.6	34.8	15.7	20.4	61.0	19.3	19.7	33.7	69.4	10.4	20.2	44.9
6-10 years	36.8	49.6	13.6	56.2	53.0	27.0	20.1	59.5	60.4	16.4	23.2	61.4
11+ years	20.3	69.4	10.3	80.1	33.3	48.4	18.4	69.7	43.8	33.0	23.1	68.6
Wealth index												
Poorest	58.5	23.3	18.2	12.1	68.9	11.9	19.2	25.0	74.5	6.2	19.3	41.8
Poorer	52.0	31.1	17.0	21.1	63.0	16.5	20.5	44.4	66.8	11.2	21.9	53.5
Middle	46.1	38.3	15.6	36.6	54.9	24.6	20.6	57.2	60.0	16.6	23.4	62.6
Richer	37.8	48.8	13.4	53.0	44.3	35.6	20.1	65.8	50.5	25.2	24.4	67.5
Richest	21.0	69.1	9.9	77.3	28.0	55.0	17.0	73.0	36.0	41.6	22.4	71.8
Unweighted Number	6830	7706	2083	16619	50583	23206	15649	89438	65141	17474	18820	101435
Institutional delivery (%)												
Residence												
Urban	28.9	41.6	29.5	70.5	46.1	44.2	9.7	90.3	52.1	42.6	5.3	94.7
Rural	15.4	15.5	69.1	30.9	55.5	21.8	22.7	77.3	65.7	22.5	11.8	88.2
Age of women												
15-19 years	19.5	17.8	62.7	37.3	61.4	23.4	15.3	84.7	71.6	19.0	9.4	90.6
20-29 years	20.5	23.6	55.9	44.1	54.7	28.4	16.9	83.1	64.0	26.9	9.1	90.9
30+ years	15.1	20.9	64.0	36.0	46.5	29.4	24.1	75.9	55.8	32.2	12.0	88.0
Mother's education (in years of schooling)												
Up to 5 years	13.5	10.5	76.0	24.0	53.2	14.3	32.6	67.4	66.1	13.9	20.0	80.0
6-10 years	30.0	31.9	38.1	61.9	59.1	28.7	12.1	87.9	68.1	24.3	7.6	92.4
11+ years	22.4	64.5	13.1	86.9	41.5	53.8	4.7	95.3	50.2	47.1	2.7	97.3
Wealth index												
Poorest	8.7	4.5	86.8	13.2	52.9	8.2	38.9	61.1	68.9	8.9	22.2	77.8
Poorer	15.0	9.3	75.7	24.3	61.9	15.0	23.1	76.9	71.9	16.8	11.4	88.7
Middle	23.6	17.6	58.9	41.1	60.2	26.5	13.3	86.7	67.3	26.0	6.7	93.3
Richer	28.5	31.7	39.8	60.2	50.6	41.2	8.2	91.8	57.3	38.6	4.2	95.8
Richest	23.4	62.1	14.4	85.6	34.0	62.1	3.9	96.1	39.5	58.4	2.2	97.8
Unweighted Number	9122	8622	19086	36830	105615	42570	42612	190797	114952	40280	21611	176843
PNC checkup for mother (%)												
Residence												
Urban	38.4	61.6	0.0	59.5	48.1	50.1	1.9	74.7	53.9	46.1	0.0	84.9
Rural	47.5	52.5	0.0	23.5	66.0	29.8	4.2	61.0	73.1	26.9	0.0	74.9
Age of women												

15-19 years	48.7	51.3	0.0	26.5	67.9	29.8	2.3	64.8	77.5	22.5	0.0	71.8
20-29 years	43.9	56.1	0.0	35.5	61.1	35.6	3.3	66.7	69.0	31.0	0.0	78.3
30+ years	39.2	60.8	0.0	29.2	55.6	40.5	3.9	61.0	61.9	38.1	0.0	77.0
Mother's education (in years of schooling)												
Up to 5 years	55.1	44.9	0.0	17.2	71.8	21.8	6.5	51.4	81.6	18.4	0.0	65.3
6-10 years	45.9	54.1	0.0	50.3	63.3	34.1	2.6	71.0	72.6	27.4	0.0	80.0
11+ years	24.5	75.5	0.0	77.9	41.4	57.6	1.0	80.4	50.6	49.4	0.0	87.3
Wealth index												
Poorest	66.7	33.4	0.0	8.6	78.4	13.9	7.7	44.7	87.9	12.1	0.0	60.9
Poorer	60.0	40.0	0.0	17.6	75.1	20.2	4.8	58.9	80.1	19.9	0.0	73.7
Middle	56.2	43.8	0.0	31.3	65.7	31.5	2.9	70.4	71.6	28.4	0.0	81.9
Richer	45.3	54.8	0.0	48.5	52.6	45.5	1.9	76.9	59.6	40.4	0.0	86.3
Richest	25.8	74.2	0.0	75.2	33.7	65.3	1.0	81.7	39.8	60.2	0.0	90.5
<i>Unweighted Number</i>	7232	7499	0	14731	78741	35669	4079	118489	98077	36625	0	134702

Supplementary Table S3 (b): Trends in utilization of child healthcare services by public, private, and other health facilities across selected background characteristics in India, 2005-2021

	2005-06				2015-16				2019-21			
	Public	Private	Others	Total	Public	Private	Others	Total	Public	Private	Others	Total
Care seeking for ARI among children (%)												
Residence												
Urban	12.5	79.6	7.9	81.6	24.5	73.4	2.1	91.2	27.7	71.4	0.9	55.8
Rural	13.1	73.3	13.6	73.7	21.3	72.2	6.5	84.4	27.8	67.8	4.4	56.7
Age of women												
15-19 years	7.3	78.3	14.3	77.4	23.6	71.0	5.4	80.4	29.0	71.0	0.0	63.0
20-29 years	13.9	74.5	11.6	74.9	22.1	72.6	5.4	87.0	27.2	69.2	3.6	56.6
30+ years	12.6	74.2	13.2	76.6	22.1	72.5	5.4	84.1	29.3	66.4	4.3	55.2
Mother's education (years of schooling)												
Up to 5 years	12.8	74.6	12.6	74.1	19.4	72.9	7.7	83.5	26.3	68.9	4.8	57.0
6-10 years	15.7	71.3	13.1	77.7	26.2	69.7	4.2	87.6	32.0	64.5	3.5	57.1
11+ years	5.1	89.0	5.9	80.9	20.4	77.0	2.7	89.1	23.8	74.0	2.1	55.0
Wealth index												
Poorest	11.1	74.6	14.3	66.8	18.6	72.7	8.7	80.1	26.8	65.0	8.2	58.2
Poorer	11.2	74.4	14.4	75.1	25.0	67.3	7.7	85.0	30.4	68.2	1.4	57.4
Middle	20.0	68.7	11.3	77.0	25.8	69.3	4.9	88.2	32.3	65.2	2.5	55.2
Richer	10.9	78.4	10.8	82.9	23.3	75.2	1.5	89.9	26.4	73.0	0.6	57.7
Richest	10.8	82.0	7.2	83.2	17.0	82.0	1.0	92.8	20.2	76.6	3.2	51.9
Unweighted number	350	1334	216	1900	1701	3896	278	5875	1226	1994	93	3313
Care seeking diarrhea among children (%)												
Residence												
Urban	15.3	69.9	14.8	73.8	22.2	74.4	3.4	80.3	28.7	69.1	2.2	78.1
Rural	18.8	65.1	16.1	67.5	23.6	68.1	8.4	76.5	30.9	65.9	3.2	75.8
Age of women												
15-19 years	20.6	68.6	10.8	63.9	22.0	72.3	5.7	70.5	26.4	68.6	4.9	77.1
20-29 years	17.6	67.8	14.6	70.0	23.4	69.7	6.9	78.3	29.2	68.2	2.7	76.7
30+ years	17.6	60.8	21.6	68.6	22.6	69.6	7.8	75.9	35.7	60.8	3.5	75.1
Mother's education (years of schooling)												
Up to 5 years	18.5	63.7	17.8	66.3	21.5	68.4	10.1	75.8	30.9	65.0	4.1	75.7
6-10 years	19.7	67.2	13.1	72.4	27.8	67.3	4.9	77.8	31.8	65.7	2.5	76.2
11+ years	8.9	79.4	11.8	77.6	18.9	77.0	4.2	80.7	27.5	70.4	2.2	77.7
Wealth index												
Poorest	23.7	59.1	17.2	60.0	21.6	67.0	11.4	72.7	31.3	64.0	4.7	75.4
Poorer	18.3	62.6	19.2	66.9	26.5	65.1	8.4	76.4	31.0	65.7	3.3	73.7
Middle	18.6	65.5	16.0	70.2	26.3	67.9	5.8	78.9	33.0	65.1	1.8	75.9
Richer	16.2	69.2	14.6	73.8	23.3	72.6	4.1	80.4	28.8	69.8	1.4	80.1
Richest	10.8	78.9	10.3	80.6	16.3	81.4	2.4	83.4	24.9	73.1	2.1	80.0
Unweighted number	670	1854	455	2979	4815	11075	1158	17048	4337	6822	329	11488

Supplementary Table S4 (a): Adjusted percentage* (obtained after the multinomial logit regression analysis) of maternal healthcare services utilization by public, private and other health facilities across selected socioeconomic characteristics in India, 2019-21

	2005-06			2015-16			2019-21		
	Public	Private	Others	Public	Private	Others	Public	Private	Others
Four or more ANC visits									
Residence									
Urban	43.1	48.5	8.4	47.2	39.4	13.4	56.0	27.5	16.5
Rural	63.7	27.5	8.7	66.2	21.1	12.7	70.7	14.6	14.8
Age of women									
15-19 years	59.6	30.2	10.2	61.5	23.9	14.7	67.3	15.3	17.4
20-29 years	57.3	33.8	8.9	59.8	26.6	13.6	66.5	17.4	16.1
30+ years	60.0	32.6	7.4	59.5	28.0	12.5	66.6	20.3	13.0
Mother's education (in years of schooling)									
Up to 5 years	66.9	25.4	7.7	68.6	19.9	11.5	76.8	11.4	11.9
6-10 years	50.9	39.0	10.2	58.8	27.3	13.9	68.6	15.5	15.9
11+ years	28.6	61.2	10.3	40.6	44.8	14.5	54.2	28.0	17.8
Wealth index									
Poorest	74.2	19.1	6.7	77.1	13.7	9.2	81.7	8.7	9.7
Poorer	66.4	25.6	8.0	72.1	16.8	11.1	74.2	11.9	13.9
Middle	60.6	29.9	9.5	63.8	22.0	14.2	67.3	15.9	16.9
Richer	50.3	40.0	9.8	54.3	30.7	15.0	59.5	22.3	18.2
Richest	29.9	60.1	10.0	37.3	48.5	14.2	45.6	35.6	18.8
Total	58.1	33.2	8.6	59.7	27.4	12.9	66.6	18.2	15.2
Institutional delivery									
Residence									
Urban	32.5	37.0	30.5	46.0	43.4	10.7	54.8	39.7	5.5
Rural	17.3	13.1	69.6	55.6	20.4	24.0	66.2	19.9	13.8
Age of women									
15-19 years	20.5	16.1	63.4	53.0	18.8	28.2	64.9	14.3	20.8
20-29 years	22.9	20.5	56.7	55.8	26.4	17.8	65.7	24.1	10.2
30+ years	18.1	18.2	63.7	50.2	29.9	19.9	61.1	27.5	11.4
Mother's education (in years of schooling)									
Up to 5 years	14.6	8.8	76.6	52.9	17.5	29.6	65.3	16.2	18.4
6-10 years	33.8	27.1	39.1	57.4	29.1	13.5	66.8	25.2	8.0
11+ years	28.5	58.6	12.9	42.2	51.7	6.1	52.2	44.5	3.3
Wealth index									
Poorest	8.8	4.0	87.3	51.1	7.5	41.4	65.4	7.4	27.2
Poorer	15.4	7.9	76.7	60.3	11.8	27.9	71.6	14.1	14.3
Middle	26.1	13.9	60.1	60.3	22.3	17.5	69.4	22.1	8.4
Richer	33.4	26.4	40.2	53.2	35.8	11.0	61.6	33.1	5.3
Richest	28.7	56.5	14.8	38.2	56.1	5.7	45.5	51.9	2.6
Total	59.0	21.4	19.6	52.3	28.3	19.4	64.1	25.3	10.5
PNC checkup for mother									
Residence									
Urban	49.6	50.4	0.0	51.4	46.2	2.4	58.6	41.4	0.0

Rural	62.4	37.6	0.0	72.1	23.5	4.4	78.0	22.0	0.0
Age of women									
15-19 years	59.1	40.9	0.0	71.7	25.5	2.9	65.2	25.9	0.0
20-29 years	58.7	41.3	0.0	66.8	29.7	3.5	64.7	29.0	0.0
30+ years	59.5	40.5	0.0	62.5	32.9	4.6	64.5	28.9	0.0
Mother's education									
(in years of schooling)									
Up to 5 years	64.7	35.3	0.0	74.8	18.9	6.4	84.2	15.8	0.0
6-10 years	56.9	43.1	0.0	69.0	28.3	2.6	76.7	23.3	0.0
11+ years	32.9	67.1	0.0	46.1	52.5	1.3	56.3	43.7	0.0
Wealth index									
Poorest	70.1	29.9	0.0	80.1	12.5	7.4	89.6	10.4	0.0
Poorer	64.9	35.1	0.0	78.8	16.4	4.8	83.0	17.0	0.0
Middle	64.5	35.5	0.0	69.7	27.4	2.9	75.3	24.7	0.0
Richer	54.8	45.2	0.0	57.0	41.0	2.0	63.7	36.3	0.0
Richest	32.8	67.2	0.0	38.0	60.8	1.2	45.4	54.6	0.0
Total	58.9	41.0	0.0	63.0	33.0	3.9	72.6	27.4	0.0

*Adjusted for caste, religion, parity, and household decision making by women

Supplementary Table S4 (b): Adjusted percentage* (obtained after the multinomial logit regression analysis) of child healthcare services utilization by public, private and other health facilities across selected socioeconomic characteristics in India, 2019-21

	2005-06			2015-16			2019-21		
	Public	Private	Others	Public	Private	Others	Public	Private	Others
Care seeking for ARI									
Residence									
Urban	16.4	81.4	2.2	26.4	73.3	0.4	27.8	72.1	0.1
Rural	24.1	71.9	4.0	28.6	70.7	0.6	32.8	67.0	0.2
Age of women									
15-19 years	21.8	73.4	4.8	28.6	69.9	1.5	26.9	73.1	0.0
20-29 years	22.5	74.4	3.1	28.0	71.4	0.6	30.3	69.5	0.2
30+ years	21.2	74.4	4.4	27.8	71.8	0.4	35.1	64.7	0.3
Mother's education (in years of schooling)									
Up to 5 years	22.0	73.9	4.1	27.3	71.9	0.7	32.9	66.7	0.4
6-10 years	24.9	72.2	2.9	31.0	68.6	0.4	35.3	64.6	0.2
11+ years	15.7	82.8	1.6	24.2	75.4	0.4	25.3	74.7	0.0
Wealth index									
Poorest	20.8	74.8	4.5	29.8	69.3	0.9	35.5	64.0	0.5
Poorer	25.8	69.1	5.1	31.8	67.2	1.1	34.2	65.8	0.0
Middle	27.8	68.7	3.5	29.4	70.6	0.1	36.0	63.6	0.3
Richer	19.6	78.1	2.3	27.7	72.1	0.2	26.7	73.3	0.0
Richest	14.3	84.5	1.2	18.8	80.9	0.3	21.7	78.3	0.0
Total	22.1	74.3	3.6	27.9	71.5	0.0	31.5	68.3	0.0
Care seeking for diarrhoea									
Residence									
Urban	16.1	69.8	14.2	22.8	73.7	3.5	31.2	66.2	2.6
Rural	24.1	59.7	16.3	27.2	65.4	7.4	35.6	61.6	2.8
Age of women									
15-19 years	25.4	62.8	11.8	20.4	75.3	4.3	33.9	61.8	4.3
20-29 years	21.9	63.7	14.4	25.9	67.7	6.4	33.2	64.4	2.4
30+ years	21.3	58.0	20.7	26.5	67.5	6.0	37.6	58.8	3.6
Mother's education (in years of schooling)									
Up to 5 years	21.9	60.3	17.8	26.5	64.3	9.2	36.9	59.3	3.8
6-10 years	25.7	62.0	12.3	28.0	67.0	5.0	38.1	59.6	2.3
11+ years	12.8	75.6	11.6	21.3	76.1	2.6	27.1	70.9	2.0
Wealth index									
Poorest	24.5	57.7	17.8	26.1	62.9	11.0	36.1	59.4	4.6
Poorer	23.9	58.3	17.8	31.1	61.9	7.0	38.8	58.5	2.7
Middle	25.8	57.7	16.5	28.4	66.6	4.9	38.3	60.2	1.5
Richer	18.7	67.3	14.1	23.4	73.2	3.5	31.6	66.7	1.7
Richest	13.7	76.2	10.1	18.2	78.8	3.1	24.4	72.9	2.7
Total	22.0	62.3	15.7	25.9	67.9	6.2	34.4	62.8	2.7

*Adjusted for caste, religion, parity, and household decision making by women

Supplementary Table S5: Districts by stages of private sector market development for MCH services in India, 2019-21

	Four or more ANC visits		Institutional delivery		PNC checkup for mother		Care seeking for ARI		Care seeking for diarrhoea	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Stages of market development										
Early	3	0.4	1	0.1	1	0.1	126	17.8	59	8.3
Developing	674	95.3	628	88.8	631	89.3	430	60.8	486	68.7
Mature	30	4.2	78	11	75	10.6	151	21.4	162	22.9