

State Nutrition Profile: Maharashtra

ABOUT THIS DATA NOTE

This *Data Note* describes the trends for a set of key nutrition and health outcomes, determinants, and coverage of interventions. The findings are based on data from multiple rounds of the National Family Health Surveys using estimates from reports, factsheets, or unit level data. In addition to standard prevalence-based analyses, this *Data Note* includes headcount-based analyses aligned to the POSHAN Abhiyaan monitoring framework to provide evidence that helps identify priority districts and the number of districts where public health concerns exist as per the WHO guidelines¹. This *Data Note* also includes a color-coded dashboard to compare the coverage of nutrition interventions by district. It concludes with key takeaways for children, women, and men, and identifies areas for improvement.

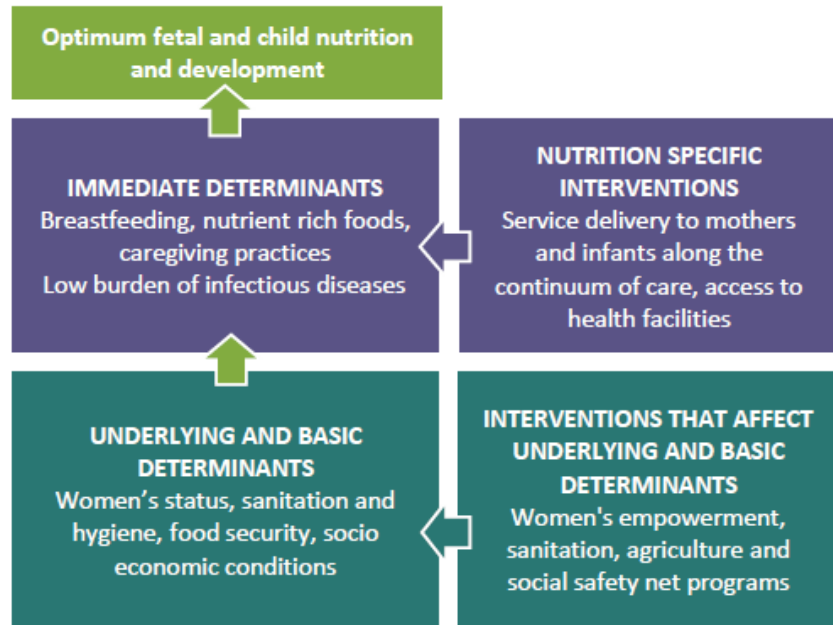
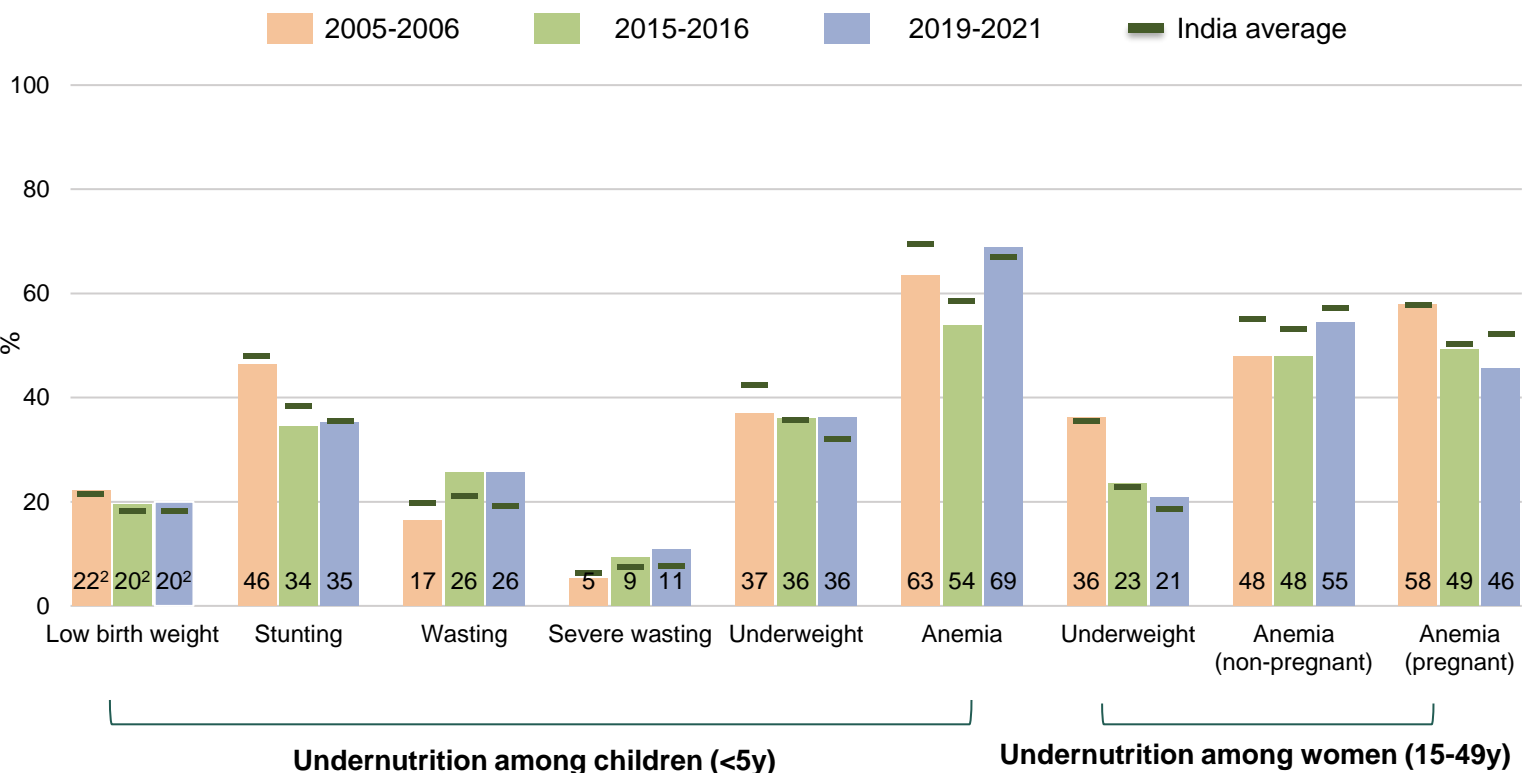


Figure 1. Trends in undernutrition outcomes 2005-2006, 2015-2016, 2019-2021

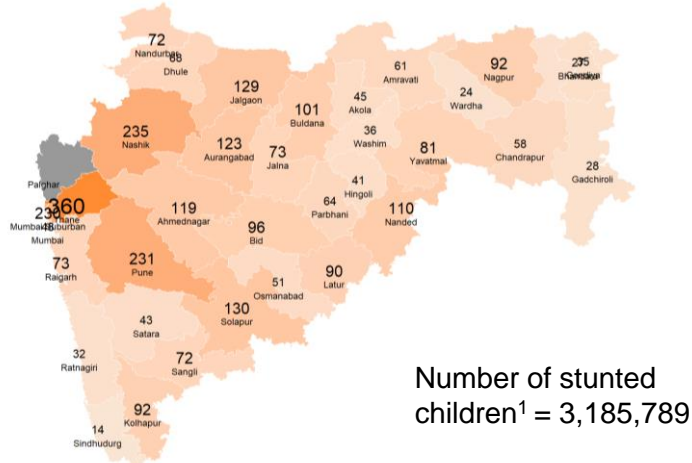


Source: NFHS-3 (2005-2006) national report and data [IFPRI estimates], NFHS-4 (2015-2016) national report, and NFHS-5 (2019-2021) national and state factsheets. Anemia among non-pregnant and pregnant women for 2005-2006 are IFPRI estimates using woman dataset.

¹WHO. Nutrition Landscape Information System (NLIS). Help Topic: Malnutrition in children. Stunting, wasting, overweight, and underweight. (<https://apps.who.int/nutrition/landscape/help.aspx?menu=0&helpid=391&lang=EN>). ²In NFHS-3, NFHS-4, and NFHS-5, 25.7%, 4.9%, and 4.0% of data were missing, respectively.

Map 1 & 2. Number of stunted & anemic children <5y, 2019-2021

Map 1. Stunting



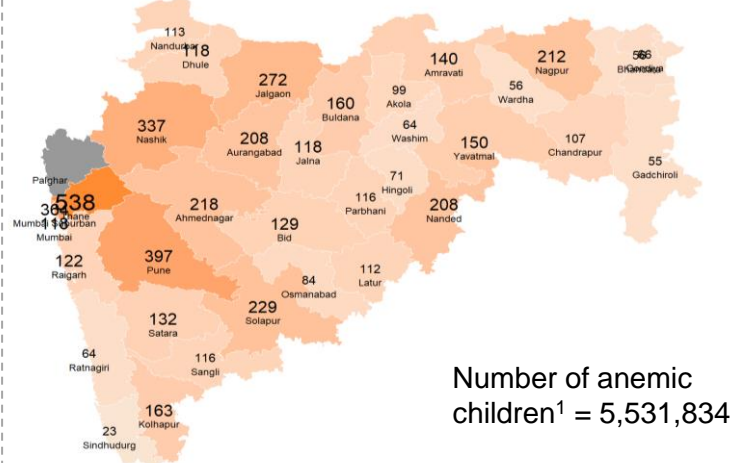
Note: Number in '000s in the above figure

Highest burden districts

1	Thane	359,615
2	Nashik	235,325
3	Pune	230,914
4	Mumbai Suburban	229,629
5	Solapur	130,435

No. of districts with public health concern²: 36 of 36

Map 2. Anemia



Note: Number in '000s in the above figure

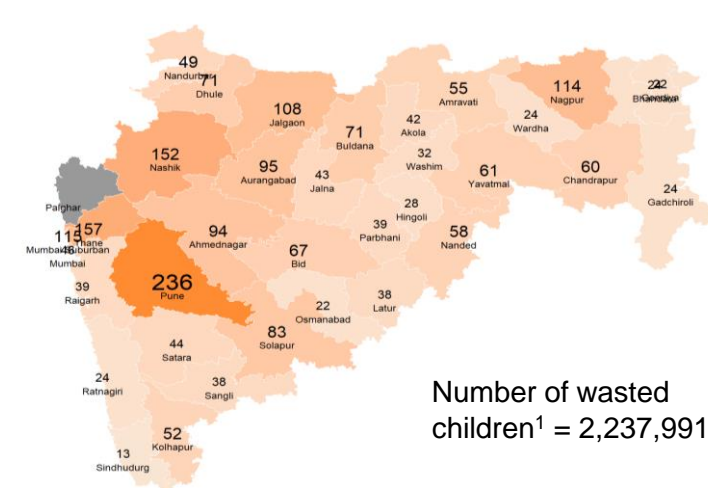
Highest burden districts

1	Thane	537,615
2	Pune	396,620
3	Mumbai Suburban	363,757
4	Nashik	337,127
5	Jalgaon	271,956

No. of districts with public health concern²: 36 of 36

Map 3 & 4. Number of wasted children <5y, 2019-2021

Map 3. Wasting



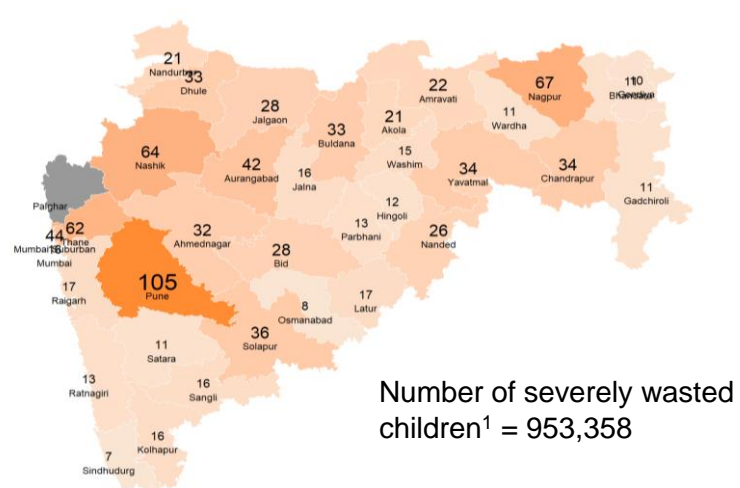
Note: Number in '000s in the above figure

Highest burden districts

1	Pune	236,180
2	Thane	156,891
3	Nashik	151,679
4	Mumbai Suburban	114,814
5	Nagpur	113,687

No. of districts with public health concern²: 36 of 36

Map 4. Severe Wasting



Note: Number in '000s in the above figure

Highest burden districts

1	Pune	105,303
2	Nagpur	66,875
3	Nashik	63,571
4	Thane	61,699
5	Mumbai Suburban	44,444

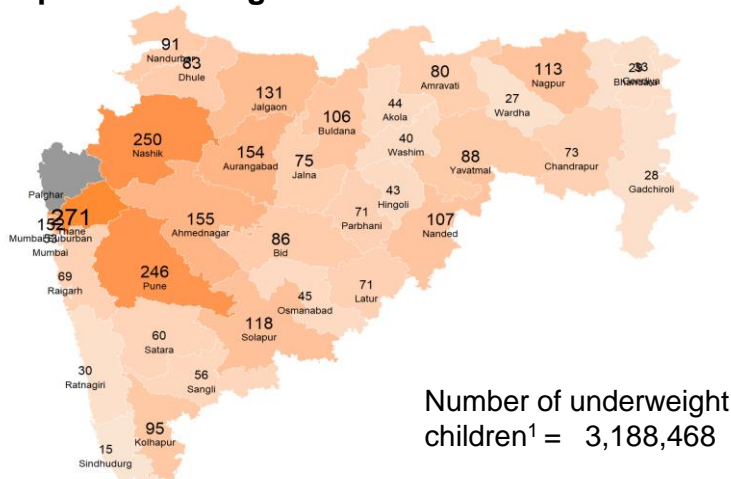
No. of districts with public health concern²: 36 of 36

Source: IFPRI estimates - The headcount was calculated as the product of the undernutrition prevalence, and the total eligible projected population for each district in 2019. Prevalence estimates were obtained from NFHS-5 (2019-2021) district factsheets, and the projected population for 2019 was estimated using Census 2011. ¹The total number of children <5 years is 8,917,169. ²Public health concern is defined as ≥20% for stunting, ≥40% for anemia, ≥10% for wasting, and ≥2% for severe wasting (WHO 2011).

Note: Gray areas indicates districts for which data are not available.

Map 5 & 6. Number of underweight children (<5y) & women (15-49y), 2019-2021

Map 5. Underweight children



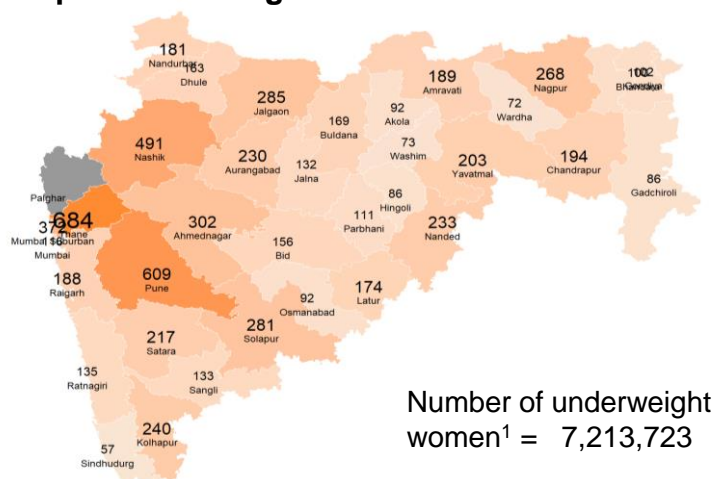
Note: Number in '000s in the above figure

Highest burden districts

1	Thane	271,474
2	Nashik	249,823
3	Pune	245,958
4	Ahmadnagar	154,716
5	Aurangabad	154,353

No. of districts with public health concern²: 36 of 36

Map 6. Underweight women



Note: Number in '000s in the above figure

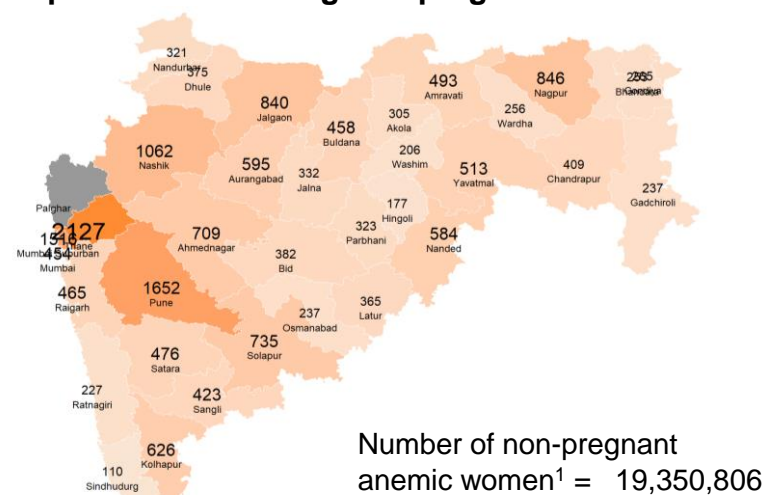
Highest burden districts

1	Thane	683,614
2	Pune	608,660
3	Nashik	490,549
4	Mumbai Suburban	372,130
5	Ahmadnagar	301,662

No. of districts with public health concern²: 36 of 36

Map 7 & 8. Number of anemic women (15-49y), 2019-2021

Map 7. Anemia among non-pregnant women



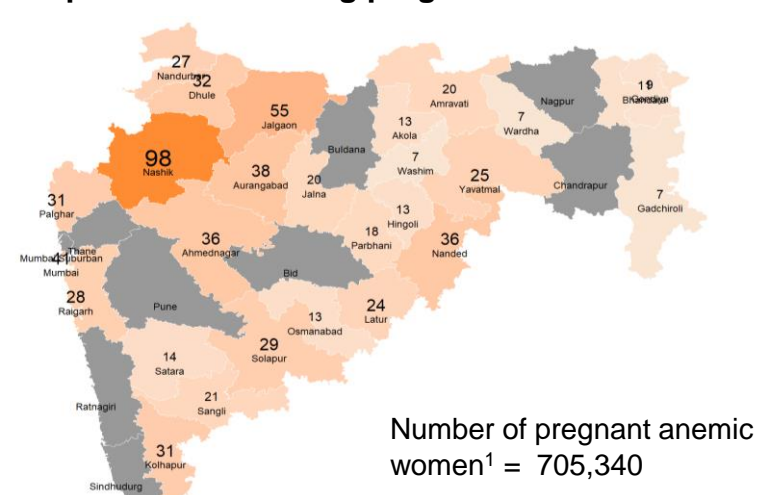
Note: Number in '000s in the above figure

Highest burden districts

1	Thane	2,126,799
2	Pune	1,652,076
3	Mumbai Suburban	1,515,974
4	Nashik	1,061,578
5	Nagpur	846,486

No. of districts with public health concern²: 36 of 36

Map 8. Anemia among pregnant women



Note: Number in '000s in the above figure

Highest burden districts

1	Nashik	97,867
2	Jalgaon	54,726
3	Mumbai City	41,118
4	Aurangabad	37,876
5	Ahmadnagar	36,463

No. of districts with public health concern²: 20 of 27

Source: IFPRI estimates - The headcount was calculated as the product of the undernutrition prevalence, and the total eligible projected population for each district in 2019. Prevalence estimates were obtained from NFHS-5 (2019-2021) district factsheets, and the projected population for 2019 was estimated using Census 2011. ¹The total number of children <5 years is 8,917,169, pregnant women 15-49 years is 2,309,503, and non-pregnant women 15-49 years is 33,176,376. ²Public health concern is defined as $\geq 20\%$ for underweight (children), $\geq 10\%$ for underweight (women), $\geq 40\%$ for anemia among non-pregnant women, and $\geq 40\%$ for anemia among pregnant women (WHO 2011).

Figure 2. Trends in overweight/obesity & NCDs¹
2005-2006, 2015-2016, 2019-2021

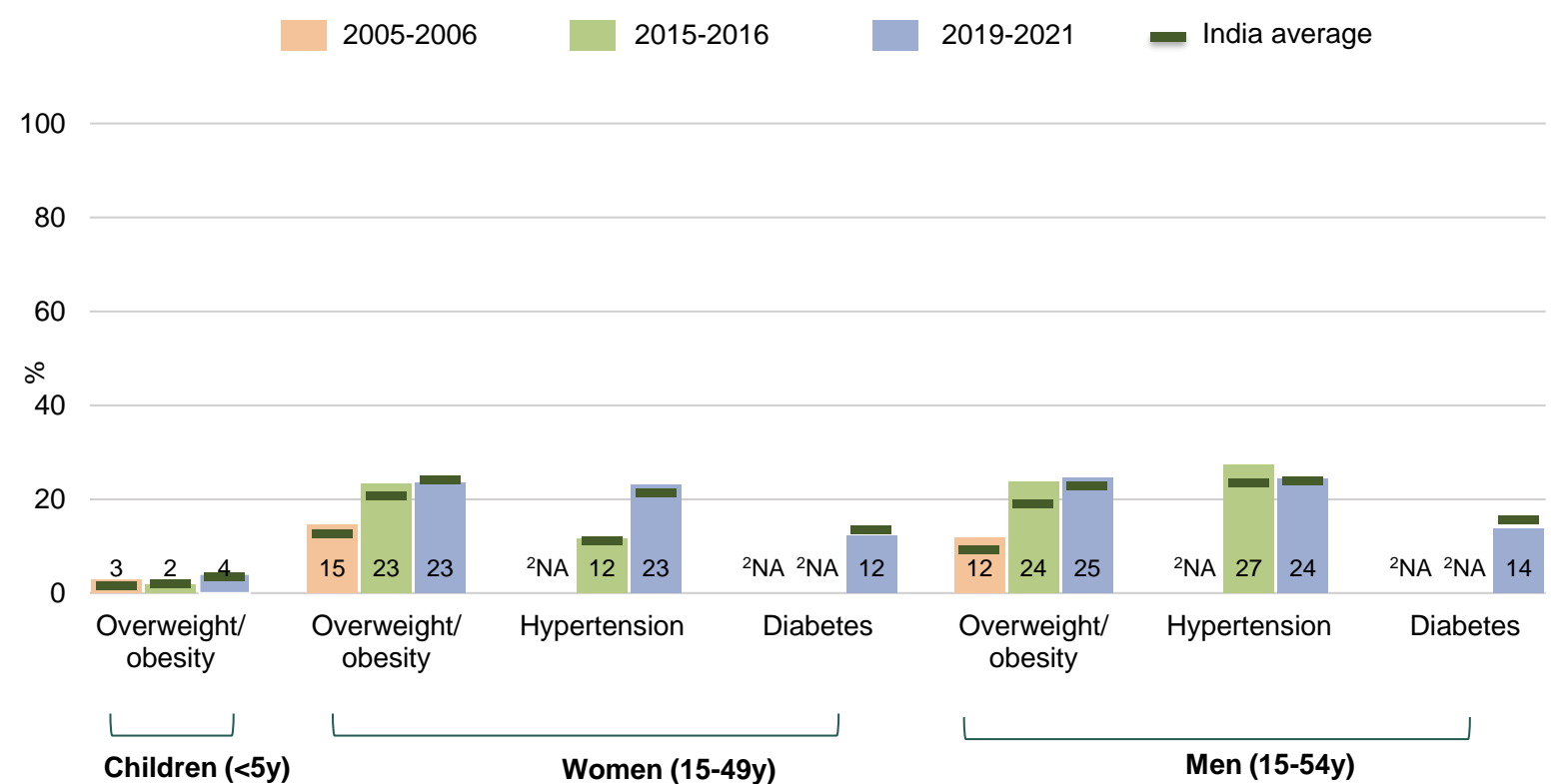


Table 1. Overweight/obesity & NCDs¹ at district-level
2015-2016, 2019-2021

Category	Outcomes	Worst performing districts (pp)	Best performing districts (pp)	Highest burden districts (thousands) ⁴	No of districts with public health concern ⁵ (total=36)
		<i>Difference between (2019-2021) & (2015-2016)³</i>	<i>Difference between (2019-2021) & (2015-2016)³</i>	2019-2021	2019-2021
Children <5 years	Overweight/obesity	Nagpur: +9.1 Gadchiroli: +8.8	Dhule: -1.9 Pune: -1.6	Mumbai Su ⁶ : 65 Thane: 44	0
Women (15-49 years)	Overweight/obesity	Dhule: +9.9 Parbhani: +9.8	Nagpur: -9.9 Mumbai: -9.0	Mumbai Su ⁶ :1233 Thane: 1111	20
	Hypertension	Sindhudurg: +16.7 Sangli: +16.4	<i>Not Applicable⁷</i>	Thane: 887 Mumbai Su ⁶ :813	28
	Diabetes	<i>Not Available²</i>		Mumbai Su ⁶ :602 Thane: 568	1
Men (15-54 years)	Overweight/obesity	<i>Not available²</i>			
	Hypertension	Nashik: +5.5 Solapur: +4.8	Mumbai: -31.1 Amravati: -20.1	Thane: 1154 Mumbai Su ⁶ :961	25
	Diabetes	<i>Not Available²</i>		Mumbai Su ⁶ :721 Thane: 539	2

Source: NFHS-3 (2005-2006) national report, NFHS-4 (2015-16) national report and data [IFPRI estimates], and NFHS-5 (2019-2021) national and state factsheets. pp: percentage points.

¹NCDs : non-communicable diseases. ²Indicates unavailability of data for a particular indicator in the specified NFHS round. Diabetes data for NFHS-4 are not included in the NFHS-5 factsheet because definition of diabetes is not comparable between NFHS-4 and 5. ³The difference is calculated only between districts that are comparable between 2015-2016 and 2019-2021. All districts except Thane are comparable across periods. ⁴Burden: The headcount was calculated as the product of the prevalence and the total eligible projected population for each district in 2019. Prevalence estimates were obtained from NFHS-5 (2019-2021) district factsheets and projected population for 2019 was estimated using Census 2011. ⁵Public health concern is defined as prevalence $\geq 15\%$ for overweight/obesity (children), $\geq 20\%$ for overweight/obesity (women and men), $\geq 20\%$ hypertension (women and men), and $\geq 20\%$ diabetes (women and men) (WHO 2011). ⁶District codes: Mumbai Su: Mumbai Suburban. ⁷Prevalence did not decrease in any of the districts.

Figure 3. Trends in immediate determinants (%)
2005-2006, 2015-2016, 2019-2021

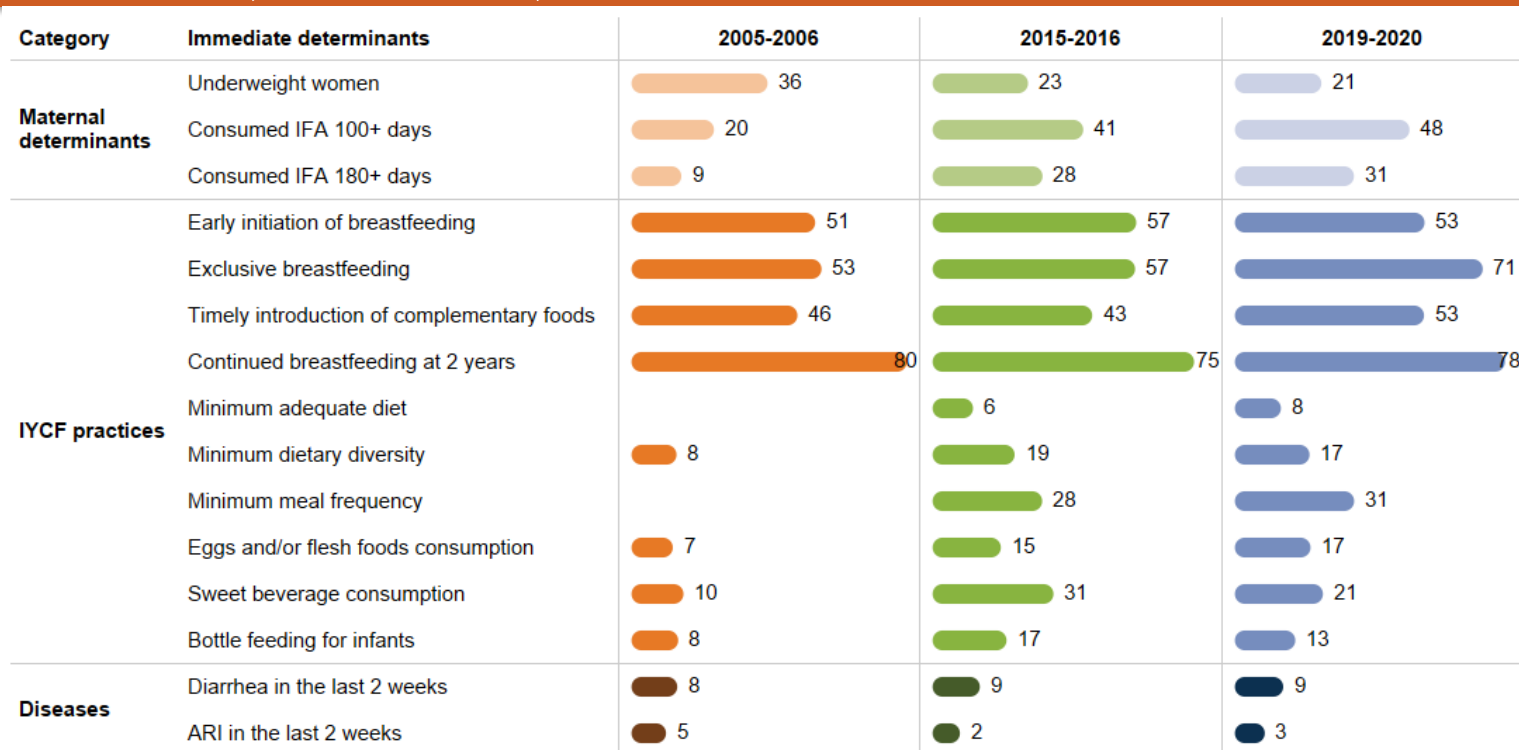


Table 2. Immediate determinants at district-level
2015-2016, 2019-2021

Category	Immediate determinants	Worst performing districts (pp)	Best performing districts (pp)	Top coverage districts (%) ²
		<i>Difference between (2019-2021) & (2015-2016)¹</i>	<i>Difference between (2019-2021) & (2015-2016)¹</i>	<i>2019-2021</i>
Maternal determinants	Underweight women	Jalgaon: +3.2 Solapur: +2.1	Wardha: -12.2 Gondiya: -12.0	Mumbai: 12.0 Mumbai Su ³ : 12.2
	Consumed IFA 100+ days	Gondiya: -23.9 Hingoli: -19.6	Buldana: +39.6 Sindhudurg: +31.0	Mumbai: 72.4 Gadchiroli: 70.8
IYCF practices	Early initiation of breastfeeding	Jalgaon: -20.7 Ratnagiri: -17.2	Buldana: +38.3 Bhandara: +24.1	Nagpur: 70.1 Washim: 69.4
	Exclusive breastfeeding	Hingoli: -26.0	Washim: +25.7 Amravati: +19.7	Nandurbar: 86.6 Washim: 85.9
	Timely introduction of complementary foods	<i>Not Available⁴</i>	<i>Not Available⁴</i>	Akola: 46.7
	Minimum adequate diet	Sindhudurg: -17.1 Bid: -12.3	Satara: +14.6 Jalgaon: +12.0	Satara: 15.8 Mumbai Su ³ : 15.3
Diseases	Diarrhea in the last 2 weeks	Washim: +12.2 Nashik: +11.1	Kolhapur: -8.1 Latur: -6.3	Sindhudurg: 0.6 Mumbai Su ³ : 1.7
	ARI in the last 2 weeks	Chandrapur: +6.1 2 Districts ⁵ : +4.1	Raigarh: -5.1 Sangli: -4.0	Yavatmal: 0.0 Sangli: 0.3

Source: NFHS-3 (2005-2006) national and state reports and data [IFPRI estimates], NFHS-4 (2015-2016) state report and data [IFPRI estimates], and national and state reports, factsheets, and data [IFPRI estimates].

pp: percentage points.

Note: Definitions of IYCF indicators are based on WHO guidelines. ¹The difference is calculated only between districts that are comparable between 2015-2016 and 2019-2021. All districts except Thane are comparable across periods. ²For all indicators, top coverage districts refer to the districts with the highest prevalence in immediate determinants, except for underweight women, diarrhea in the last 2 weeks, and ARI in the last 2 weeks, for which it refers to the districts with the lowest prevalence in coverage. ³District codes: Mumbai Su: Mumbai Suburban ⁴Indicates unavailability of data for a particular indicator in the specified NFHS round. Data on timely introduction of complementary foods are only available for Akola at the district-level. ⁵2 Districts: Buldana, Akola.

Figure 4. Trends in underlying determinants (%)
2005-2006, 2015-2016, 2019-2021



Table 3. Underlying determinants at district level
2015-2016, 2019-2021

Category	Underlying determinants	Worst performing districts (pp)	Best performing districts (pp)	Top coverage districts (%) ²
		<i>Difference between (2019-2021) & (2015-2016)</i> ¹	<i>Difference between (2019-2021) & (2015-2016)</i> ¹	2019-2021
Maternal determinants	Women with ≥10 years education	Raigarh: -4.8 Bhandara: -3.8	Mumbai Su ³ : +22.5 Mumbai: +18.2	Mumbai: 71.1 Nagpur: 67.6
	Women 20-24 years married before age of 18 years	Dhule: +6.5 Osmanabad: +5.5	Jalna: -14.8 Buldana: -13.6	Bhandara: 1.5 Ratnagiri: 4.4
	Women 15-19 years with child or pregnant	Washim: +6.9 Nashik: +5.8	Jalna: -11.5 Mumbai Su ³ : -8.4	Gondiya: 0.0 Nagpur: 0.9
Household determinants	HHS with improved drinking water source	Washim: -14.0 Raigarh: -8.3	Gondiya: +12.7 Nandurbar: +12.7	Mumbai: 100.0 Mumbai Su ³ : 99.8
	HHS using improved sanitation facility	<i>Not Applicable</i> ⁴	Osmanabad: +43.2 Mumbai Su ³ : +36.8	Nagpur: 88.9 Sindhudurg: 87.9
	HHS with electricity	<i>Not Applicable</i> ⁴	Nandurbar: +22.0 Hingoli: +12.3	Mumbai: 99.6 Nagpur: 99.5

Source: NFHS-3 (2005-2006) national and state reports and data [IFPRI estimates], NFHS-4 (2015-2016) national and state reports and data [IFPRI estimates], and NFHS-5 (2019-2021) state and district factsheets, state report, and data [IFPRI estimates].

pp: percentage points.

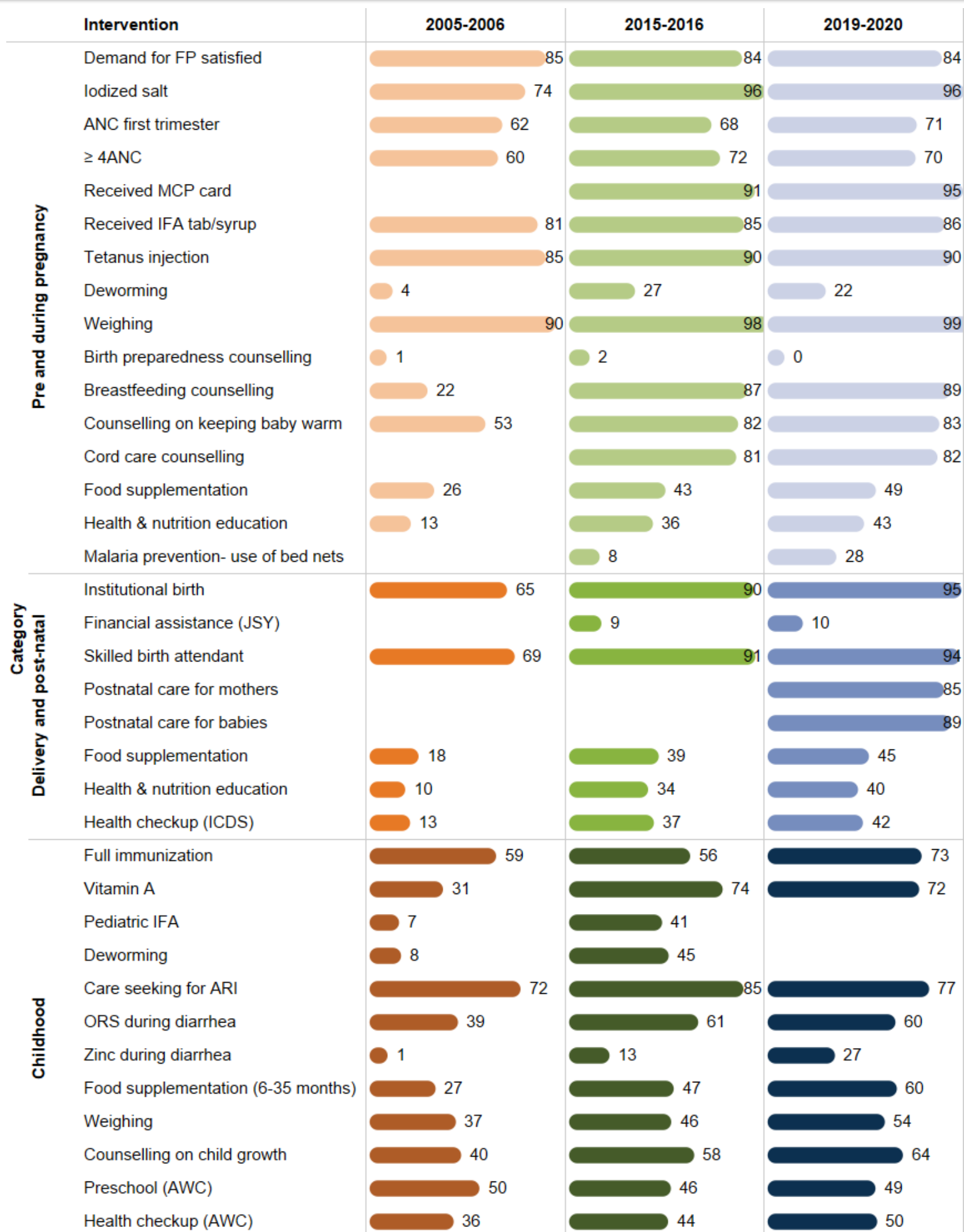
¹The difference is calculated only between districts that are comparable between 2015-2016 and 2019-2021. All districts except Thane are comparable across periods.

²For all indicators, top coverage districts refer to the districts with the highest prevalence in underlying determinants, except for women 20-24 years married before age of 18 years and women 15-19 years with child or pregnant for which it refers to the districts with the lowest prevalence in coverage.

³District codes: Mumbai Su: Mumbai Suburban.

⁴Prevalence did not decrease in any of the districts.

Figure 5. Trends in interventions across the first 1,000 days (%)
2005-2006, 2015-2016, 2019-2021



Source: NFHS-3 (2005-2006) national and state reports and data [IFPRI estimates], NFHS-4 (2015-2016) national and state reports and data [IFPRI estimates], and NFHS-5 (2019-2021) state factsheet, state and national report, and data [IFPRI estimates].

Note 1: Refer to district dashboard for the inter-district variability in the coverage of interventions.

Intervention coverage at district-level, 2019-2021

<20% 20-<40% 40-<60% 60-<80% >=80% Not Available

District name	Pre-pregnancy		Pregnancy										Delivery & postnatal										Early childhood															
	Demand for FP satisfied	ANC first trimester	ANC first trimester	≥4 ANC	Received MCP card	Received IFA tab/srup	Tetanus injection	Deworming	Weighting	Birth preparedness counselling	Breastfeeding counselling	Counseling on keeping baby warm	Cord care counselling	Food supplementation	Health & nutrition education	Malaria prevention- use of bed nets	Institutional birth	Financial assistance (ISY)	Skilled birth attendant	Postnatal care for mothers	Postnatal care for babies	Food supplementation	Health & nutrition education	Health checkup	Full immunization	Vitamin A	Paediatric IFA	Deworming	Care seeking for ARI	ORS during diarrhea	Zinc during diarrhea	Food supplementation (6-35 months)	Weighting	Counseling on child growth	Preschool at AWC	Health checkup		
Maharashtra	84.2	96.2	70.9	70.3	95.5	85.7	90.1	22.4	99.2	0.4	89.0	82.9	81.9	49.1	42.8	28.1	94.7	10.2	93.8	85.4	89.1	45.4	39.6	42.2	73.5	72.2	18.6	19.6	77.5	59.5	27.3	60.3	53.9	63.5	48.9	49.8		
Ahmadnagar	86.5	95.5	71.4	76.6	94.4	87.0	91.2	17.5	100.0	0.3	89.6	77.9	73.3	61.6	53.6	25.0	97.9	9.1	95.0	90.9	92.9	57.1	47.2	51.6	83.5	69.9	14.6	21.6	84.2	66.0	28.3	81.2	69.8	59.5	60.7	64.0		
Akola	86.9	95.2	75.1	76.3	98.3	88.2	92.9	30.2	100.0	0.0	94.9	99.9	94.3	65.4	62.7	35.5	97.7	15.8	86.4	82.3	92.2	54.0	52.5	54.0	69.5	88.3	30.3	31.0	75.8	70.6	41.1	75.6	70.2	62.0	69.6	69.6		
Amravati	92.7	98.5	89.1	71.7	99.1	83.9	93.8	35.8	97.8	0.0	87.9	82.6	83.7	73.3	58.5	27.5	91.3	17.2	89.7	80.2	79.4	69.6	53.9	60.9	92.5	85.9	27.3	30.7	78.5	61.5	20.5	80.2	72.0	71.0	66.3	70.3		
Aurangabad	70.5	98.9	65.2	57.2	95.0	85.8	86.2	20.1	97.7	1.8	83.9	69.8	74.7	45.6	36.2	30.4	94.8	6.6	96.3	76.4	82.6	42.4	32.2	39.4	56.7	69.2	18.1	18.1	64.2	55.1	30.8	59.6	51.8	64.5	48.4	47.5		
Bhandara	90.5	95.4	83.7	79.0	99.4	97.9	94.8	50.2	100.0	0.0	99.4	92.3	91.6	87.4	78.9	28.8	100.0	25.2	98.4	87.5	90.1	86.5	78.9	84.8	87.0	83.9	26.1	32.0	55.3		93.6	87.6	75.1	88.0	88.0			
Bid	78.7	96.3	65.6	56.8	97.6	85.2	78.3	18.5	99.5	0.3	84.5	73.3	77.4	49.5	45.2	24.2	94.0	3.5	90.8	79.8	80.6	45.5	42.8	43.5	75.9	82.4	28.6	19.4	62.9	58.6	17.7	62.9	56.6	71.5	56.1	54.9		
Buldhana	91.4	97.8	73.6	72.7	100.0	94.3	95.5	39.7	99.5	0.7	96.7	95.2	95.9	83.9	82.1	45.8	93.9	18.1	92.4	86.7	84.8	80.2	75.7	76.5	85.9	89.2	38.7	31.8	67.4	56.1	32.5	90.0	83.4	82.5	80.0	82.5		
Chandrapur	92.4	97.4	76.6	68.5	100.0	94.9	94.0	43.0	100.0	0.9	96.4	95.3	94.9	82.7	81.0	49.0	99.6	11.9	96.5	92.3	97.0	74.2	71.9	72.0	95.0	86.8	40.8	37.6	72.7		86.4	86.9	88.4	83.8	86.6			
Dhule	77.3	98.0	61.2	63.2	93.7	80.3	80.5	21.9	94.9	0.5	75.3	72.5	64.9	44.2	35.0	27.2	77.2	9.1	84.2	77.2	74.0	32.1	24.8	29.3	56.6	55.7	13.5	12.9	75.2	55.6	23.2	60.4	50.0	42.3	45.7	44.4		
Gadchiroli	92.7	97.7	84.6	86.8	98.0	96.5	91.4	45.3	100.0	0.0	97.4	92.4	90.7	88.6	85.7	46.8	97.3	35.1	98.2	91.5	93.7	85.4	82.8	85.0	97.9	88.1	27.4	25.1		94.7	89.5	81.6	83.5	86.4	86.4			
Gondiya	90.4	98.0	69.0	66.2	98.7	92.9	98.3	52.6	100.0	0.0	97.9	95.8	95.0	87.7	81.1	46.8	99.1	26.3	98.3	90.0	89.2	90.5	82.0	89.8	88.2	77.4	29.8	26.9	73.6		98.1	91.3	73.7	87.4	89.1	89.1		
Hingoli	87.3	99.0	82.5	66.6	98.8	79.6	88.5	27.7	98.8	0.8	84.2	65.5	74.6	58.9	41.8	25.9	94.0	13.3	95.3	90.2	85.1	59.0	41.7	47.2	76.9	72.1	21.6	24.3	69.5	37.5	22.1	79.6	66.6	52.6	62.7	58.6		
Jalgaon	74.0	96.8	60.3	58.4	91.0	73.4	82.2	11.2	96.3	0.3	71.8	67.0	71.4	32.9	25.2	22.9	86.5	4.8	81.9	74.5	78.5	23.2	19.2	22.0	61.3	57.9	11.6	18.3	61.8		42.3	36.7	42.9	39.5	31.3	31.3		
Jalna	77.8	97.6	56.0	58.4	96.1	83.2	78.3	14.6	99.1	0.6	81.2	76.4	75.1	41.2	36.9	32.1	92.8	9.0	86.5	74.0	78.9	35.3	31.3	34.0	54.3	70.1	15.7	11.3	68.7	48.1	14.8	57.2	48.2	53.2	42.2	44.6	44.6	
Kolhapur	87.1	97.7	71.5	81.8	95.3	92.8	88.3	20.4	98.8	0.4	96.0	91.9	87.3	69.3	63.9	35.7	99.2	14.8	93.6	95.2	91.5	66.3	59.6	62.3	67.2	66.0	20.2	20.6	79.8		81.4	77.8	59.9	75.9	77.2	77.2		
Latur	93.3	97.8	74.6	72.6	100.0	90.6	86.4	34.5	98.9	0.3	96.3	91.2	93.5	85.1	78.7	39.3	94.7	6.1	93.4	93.3	92.5	82.4	78.6	81.7	79.2	88.7	35.5	30.3	64.5	65.4	32.3	82.6	79.5	87.7	82.9	80.1	80.1	
Mumbai	90.5	98.3	86.2	87.1	93.1	89.0	95.4	13.3	100.0	0.0	95.1	93.3	90.1	14.5	12.1	16.9	99.5	8.6	98.3	90.6	95.9	15.5	13.8	12.7	77.8	19.4	22.0		26.1	24.1	55.3	16.1	19.4	23.6	23.6	23.6		
Mumbai Suburban	78.3	99.5	58.1	72.2	92.6	75.7	90.1	20.6	100.0	0.0	93.4	80.5	80.8	20.7	16.1	20.6	98.1	7.3	98.5	91.5	97.2	21.5	15.5	16.2	73.6	14.5	16.7		36.6	31.6	61.9	19.4	26.0	26.0	26.0	26.0	26.0	
Nagpur	91.9	97.6	78.1	71.4	96.6	93.8	92.8	37.0	98.6	0.3	97.8	96.5	97.2	61.8	59.5	43.7	100.0	7.5	96.6	91.4	90.8	60.8	57.1	59.5	89.4	95.6	37.4	35.7	65.0		75.6	70.5	76.7	68.9	70.0	70.0		
Nanded	87.1	96.9	62.5	53.5	96.7	80.0	89.8	18.6	99.5	0.5	81.0	73.3	75.4	48.5	43.9	12.9	94.8	8.1	92.6	76.1	79.3	39.1	32.9	34.4	75.7	70.5	21.1	16.2	81.6	60.4	19.9	60.0	55.1	37.4	54.2	49.9	49.9	
Nandurbar	84.7	97.6	51.0	58.2	99.2	81.6	91.0	16.3	97.8	2.4	88.3	81.9	77.9	57.1	54.2	29.5	76.3	26.8	77.9	74.4	74.2	54.4	49.8	54.3	72.4	68.2	17.9	19.5	77.2	64.7	29.1	67.6	64.5	57.6	65.0	62.7	62.7	
Nashik	90.4	97.5	83.9	89.2	95.8	91.3	91.7	17.5	100.0	0.0	89.5	80.1	84.8	82.5	69.3	22.3	98.1	6.6	99.0	94.4	95.1	74.0	61.1	64.8	89.3	67.9	13.7	23.9	71.2	43.9	15.1	86.4	76.7	63.0	67.0	74.4	74.4	
Osmanabad	82.3	86.5	84.7	86.3	92.9	86.3	94.4	11.8	98.9	1.0	95.5	87.4	95.5	54.8	51.6	27.6	94.2	18.5	95.7	97.0	96.5	53.5	50.2	50.5	94.0	72.7	13.2	13.7	70.9		57.9	54.2	62.5	46.4	52.0	52.0		
Palghar	68.6	95.1	58.6	47.4	89.0	68.9	82.0	14.7	97.0	0.2	66.4	63.2	68.5	68.5	39.5	30.6	23.3	85.6	12.8	90.8	64.4	66.8	34.1	27.1	29.5	52.0	52.9	15.5	11.3	74.5	49.8	18.1	52.2	41.6	55.0	44.1	38.6	38.6
Parbhani	78.3	97.0	79.6	68.6	93.1	85.7	90.7	15.7	100.0	0.4	81.9	75.2	64.7	23.9	19.3	20.8	98.0	4.9	98.5	84.2	95.2	19.1	15.6	17.0	58.1	69.9	10.5	7.9	94.3		27.0	27.1	60.7	37.6	24.6	24.6		
Pune	88.9	80.3	83.8	83.1	98.4	91.9	96.6	18.2	99.5	0.0	93.4	85.7	87.9	67.3	57.3	26.4	96.6	11.0	97.6	93.0	92.9	65.6	56.1	92.3	73.8	13.0	19.8	82.4		72.4	67.1	68.7	59.4	68.5	68.5			
Raigarh	83.2	91.1	64.6	78.6	97.0	87.9	93.2	22.7	99.2	0.6	91.8	87.2	84.2	57.7	55.7	28.4	97.8	8.7	95.6	89.7	92.2	52.2	49.0	50.4	77.2	77.3	27.5	22.7		64.1	69.3	59.5	73.2	68.1	68.1			
Ratnagiri	83.5	98.8	66.0	80.1	97.1	91.6	97.4	33.3	99.6	0.0	91.2	87.9	86.8	62.3	56.2	28.5	98.0	13.1	97.6	95.6	95.0	58.2	48.5	50.9	75.0	80.4	23.0	32.1		74.7	69.6	67.4	71.1	68.8	68.8			
Sangli	90.0	93.9	77.5	81.7	96.7	91.1	93.8	16.3	99.5	2.6	95.0	89.0	88.6	69.2	57.3	35.1	97.1	8.9	97.9	94.5	95.1	63.1	50.9	54.4	82.8	78.3	14.0	21.5	77.7	72.4	24.5	84.9	73.5	55.0	65.7	68.9	68.9	
Satara	80.3	94.9	70.3	73.4	100.0	93.3	96.8	32.8	100.0	0.7	97.4	95.8	88.1	54.4	51.5	28.9	100.0	14.7	98.6	96.7	98.2	51.4	49.4	50.7	76.3	78.9	21.8	25.9		61.4	64.0	59.1	67.1	62.3	62.3			
Sindhudurg	91.2	96.5	81.3	81.9	96.0	89.2	90.5	17.8	99.2	0.0	87.6	80.4	80.1	62.5	53.4	27.7	96.2	8.4	96.3	89.6	89.2	62.0	52.1	56.5	83.6	65.9	11.0	15.4	80.7	51.3	34.7	77.0	65.7	59.9	57.8	64.7	64.7	
Solapur	79.6	97.5	58.9	70.2	93.4	86.9	97.4	28.2	100.0	0.0	92.6	89.6	80.5	23.6	21.7	23.3	93.6	7.0	93.9	87.2	93.3	24.0	21.2	22.6	74.9	68.7	20.8	22.6		35.7	29.3	79.4	27.8	29.8	29.8			
Thane	91.1	97.9	87.9	70.4	98.6	91.3	93.4	47.9	99.6	0.9	94.8	90.8	89.3	71.5	64.8	28.8	98.8	12.3	99.0	89.9	90.5	70.4	63.5	66.9	92.4	87.1	25.0	28.2		80.8	76.2	79.5	78.9	79.6	79.6			
Wardha	86.1	96.5	63.4	60.0	99.2	90.0	79.5	19.4	100.0	0.4	81.6	79.4	73.2	68.4	59.6	32.8	92.9	16.7	83.1	83.4	83.4	57.3	50.3	52.3	71.6	77.9	20.3	18.7	79.4	57.9	18.6	76.6	69.7	54.8	64.5	66.9	66.9	
Washim	90.4	94.6	77.1	66.9	98.8	88.3	94.6	26.3	1																													

**Table 4. Intervention coverage at district-level
2015-2016, 2019-2021**

Category	Interventions	Worst performing districts (pp)	Best performing districts (pp)	Top coverage districts (%)
		<i>Difference between (2019-2021) & (2015-2016)³</i>	<i>Difference between (2019-2021) & (2015-2016)³</i>	<i>2019-2021</i>
Pregnancy	ANC first trimester	Parbhani: -13.9 Nagpur: -9.9	Osmanabad: +28.6 Mumbai: +25.6	Amravati: 89.1 Wardha: 87.9
	≥4 ANC visits	Parbhani: -32.0 Nanded: -17.0	Sangli: +14.6 2 Districts ⁶ : +14.3	Osmanabad: 89.2 Mumbai: 87.1
	Received MCP Card	Parbhani: -6.3 2 Districts ⁸ : -0.9	Nandurbar: +24.2 2 Districts ⁷ : +12.8	4 Districts ⁴ : 100.0
	Tetanus injection	Washim: -15.5 Jalna: -11.8	Sindhudurg: +14.6 Nandurbar: +9.1	Gondiya: 98.3 Sangli: 97.4
Delivery and post-natal	Institutional birth	Amravati: -1.7 Parbhani: -0.2	Nandurbar: +20.8 Buldana: +11.4	3 Districts ⁵ : 100.0
	Skilled birth attendant	Akola: -8.0 Jalna: -4.9	Nandurbar: +15.5 Ratnagiri: +14.2	Osmanabad: 99.0 Wardha: 99.0
	Postnatal care for mothers	<i>Not Applicable⁹</i>	<i>Not Applicable⁹</i>	Palghar: 97.0 Sindhudurg: 96.7
	Postnatal care for babies	<i>Not Applicable⁹</i>	<i>Not Applicable⁹</i>	Sindhudurg: 98.2 Mumbai Su ² : 97.2
Early childhood	Full immunization	Pune: -22.9 Jalna: -15.6	Raigarh: +44.7 Ahmadnagar: +41.6	Gadchiroli: 97.9 Chandrapur: 95.0
	Vitamin A supplementation	Dhule: -24.0 Parbhani: -17.5	Buldana: +23.4 Latur: +23.2	Nagpur: 95.6 Buldana: 89.2
	Care seeking for ARI	Jalgaon: -33.1 Buldana: -20.8	Yavatmal: +20.1 Raigarh: +12.1	Yavatmal: 97.3 Pune: 94.3
	ORS treatment during diarrhea	Osmanabad: -23.5 Buldana: -21.4	Satara: +22.6 Ahmadnagar: +19.0	Satara: 72.4 Akola: 70.6
	Zinc treatment during diarrhea	Parbhani: -1.5	Latur: +28.7 Ahmadnagar: +17.0	Akola: 41.1 Solapur: 34.7

Key takeaways

Children: Stunting prevalence declined by 12 percentage points (pp) from 2006 to 2016 and increased by 1pp between 2016 and 2021. Wasting increased by 9pp from 2006 to 2016 and remained stable thereafter. Underweight declined slightly by 1pp between 2006 and 2016 and remained stable thereafter. Anemia declined by 9pp from 2006 to 2016 but increased by 15pp from 2016 to 2021.

Women: Underweight declined by 13pp from 2006 to 2016 and by 2pp from 2016 to 2021. Anemia among non-pregnant women remained stable from 2006 to 2016 but increased by 7pp from 2016 to 2021; anemia among pregnant women declined by 9pp from 2006 to 2016 and by 3pp from 2016 to 2021. Overweight/obesity increased by 8pp from 2006 to 2016 and remained stable thereafter.

Men: Overweight/obesity increased by 12pp from 2006 to 2016 and by 1pp from 2016 to 2021.

Attention is needed to improve (%s in 2021):

- **Outcomes:** Stunting (35%), underweight (36%) and anemia in children (69%); anemia in women (46-55%)
- **Immediate determinants:** 180+ IFA (31%); minimum adequate diet (8%); minimum dietary diversity(17%)
- **Underlying determinants:** Women with ≥10 years education (50%); safe disposal of feces (22%)
- **Coverage of interventions:** Deworming (22%), malaria prevention (28%), food supplementation (45-49%), and health and nutrition education (40-43%), and financial assistance-JSY (10%) for women; zinc during diarrhea (27%) for children

Source: NFHS-3 state and national reports and data [IFPRI estimates], NFHS-4 (2015-2016) state and national reports and data [IFPRI estimates], and NFHS-5 (2019-2021) state and national reports/factsheets and data [IFPRI estimates]. ¹Prevalence did not increase or decrease in any of the districts. ²District codes: Mumbai Su: Mumbai Suburban. ³The difference is calculated only between districts that are comparable between 2015-2016 and 2019-2021. All districts except Thane are comparable across periods. ⁴Sindhudurg, Buldana, Latur, Chandrapur. ⁵Sindhudurg, Bhandara, Nagpur. ⁶Osmanabad, Raigarh. ⁷Satara, Sangli. ⁸Osmanabad, Ratnagiri. ⁹Indicators postnatal care for women and babies are not comparable between NFHS-4 and 5.

Indicator definition

Nutrition outcomes	Definition
Low birth weight^{3,5}	% live births in 5 years (y) preceding the survey with a reported birth weight <2.5 kilograms (kg), based on either a written record or the mother's recall
Stunting	% children 0-59 months (m) whose height-for-age z score < -2 standard deviations (SD)
Wasting	% children 0-59 m whose weight-for-height z score < -2SD
Severe wasting	% children 0-59 m whose weight-for-height z score < -3SD
Underweight children	% children 0-59 m whose weight-for-age z score < -2SD
Anemia among children	% children 6-59 m whose haemoglobin (Hb) <11.0 g/dl
Underweight women	% women 15-49 y whose Body Mass Index (BMI)<18.5 kg/m ² ; sample excluded pregnant women and women with a birth in the preceding 2 m
Anemia among non-pregnant women¹	% non-pregnant women 15-49 y whose Hb<12.0 g/dl
Anemia among pregnant women¹	% pregnant women 15-49 y whose Hb<11.0 g/dl
Overweight/obesity – children	% children 0-59 m whose weight-for-height z score > 2SD
Overweight/obesity – women	% women 15-49 y whose BMI ≥25.0 kg/m ² ; sample excluded pregnant women and women with a birth in the preceding 2 m
Overweight/obesity – men	% men 15-49 y whose BMI ≥25.0 kg/m ²
Hypertension among women^{2,3,10}	% women 15-49 y with elevated blood pressure (systolic ≥140 mm Hg or diastolic ≥90 mm Hg) or are currently taking medication to control blood pressure
Hypertension among men^{2,3,10}	% men 15-54 y with elevated blood pressure (systolic ≥140 mm Hg or diastolic ≥90 mm Hg) or are currently taking medication to control blood pressure
Diabetes among women¹⁰	% women 15-49 y with high (>140 mg/dl) or very high (>160 mg/dl) blood sugar or are currently taking medication to control blood sugar
Diabetes among men¹⁰	% men 15-54 y with high (>140 mg/dl) or very high (>160 mg/dl) blood sugar or are currently taking medication to control blood sugar
Immediate determinants	Definition
Underweight women	% women 15-49 y whose BMI<18.5 kg/m ² ; sample excluded pregnant women and women with a birth in the preceding 2 m
Consumed IFA 100+ days¹	% women 15-49 y who consumed iron folic acid (IFA) for 100 days or more during pregnancy for the most recent live birth in the 5 y preceding the survey
Consumed IFA 180+ days¹	% women 15-49 y who consumed IFA for 180 days or more during pregnancy for the most recent live birth in the 5 y preceding the survey
Early initiation of breastfeeding^{1,2,3,8,9}	% youngest children <2 y who started breastfeeding <1 hour of birth
Exclusive breastfeeding	% youngest children 0-5 m who were fed exclusively with breastmilk the previous day
Timely introduction of complementary foods	% youngest children 6-8 m living with their mother who received solid or semi-solid food and breastmilk
Continued breastfeeding at 2 years^{1,3,4,5,6}	% youngest children 12-23 m living with their mother who were fed breastmilk during the previous day
Minimum adequate diet^{2,3,4,5,9,10}	% youngest children 6-23 m who consumed a minimum acceptable diet during the previous day
Minimum dietary diversity^{1,2,3,4,5,9}	% youngest children 6-23 m who consumed foods and beverages from at least 5 out of 8 defined food groups during the previous day
Minimum meal frequency^{2,3,4,5,9,10}	% youngest children 6-23 m who consumed solid, semi-solid or soft foods (but also including milk feeds for non-breastfed children) at least the minimum number of times during the previous day
Eggs and/or flesh foods consumption^{1,2,3,4,5,9}	% youngest children 6-23 m who consumed egg and/or flesh food during the previous day
Sweet beverage consumption^{1,2,3,4,5,9}	% youngest children 6-23 m who consumed a sweet beverage during the previous day
Bottle feeding for infants^{1,2,3,4,5,9}	% youngest children 0-23 m who were fed from a bottle with a nipple during the previous day
Diarrhea in the last 2 weeks	% children <5 y who had diarrhea in the 2 weeks preceding the survey
ARI in the last 2 weeks	% children <5 y who had symptoms of acute respiratory infection (ARI) in the 2 weeks preceding the survey
Underlying determinants	Definition
Women with ≥10 years of education	% women 15-49 y with ≥10 y of schooling
Women 20-24 years married before age of 18 years¹	% women 20-24 y who were married when <18 y
Women 15-19 years with child or pregnant¹⁰	% women 15-19 y who were mothers or pregnant at the time of the survey
HHS with improved drinking water source	% population living in households whose source of drinking water is piped into dwelling/yard/plot, piped to neighbour, public tap/standpipe, tube well or borehole, protected dug well, protected spring, rainwater, tanker truck, cart with small tank, bottled water, or community RO plant
HHS using improved sanitation facility	% population living in households using flush to pipe sewer system, flush to septic tank, flush to pit latrine, ventilated improved pit (VIP)/biogas latrine, pit latrine with slab or twin pit/composting toilet, which is not shared with any other household
HHS with hand washing facility^{2,4,10}	% households where a place for washing hands with water and soap was present
Open defecation^{6,7}	% households that have no toilet facility/defecate in open space or field
Safe disposal of feces^{3,4,5}	% youngest children <5 y living with their mother whose stools were disposed of safely
HHS with BPL card^{3,5,6,7}	% households possessing a BPL card
HHS with electricity	% population living in households with electricity

Note: Unless specified, state and district estimates taken from NFHS-3 national/state report for NFHS-3, NFHS-4 national/state report or NFHS-5 factsheet for NFHS-4, and NFHS-5 national/state report or factsheet for NFHS-5.

¹Indicator estimated using NFHS-3 unit-level data (state level)

²Indicator estimated using NFHS-4 unit-level data (state level)

³Indicator estimated using NFHS-4 unit-level data (district level)

⁴Indicator estimated using NFHS-5 unit-level data state level

⁵Indicator estimated using NFHS-5 unit-level data (district level)

⁶Indicator estimated using NFHS-4 unit-level data for union territories as their summary reports are not available (state level)

⁷Indicator estimated using NFHS-5 unit-level data for union territories as their summary reports are not available (state level)

⁸Indicator estimated using NFHS-5 unit-level data for union territories as their summary reports are not available (district level)

⁹Indicator constructed following WHO guidelines

¹⁰Indicator not available in NFHS-3 and/or 4 tool or not comparable between NFHS-3/4 and 5

Indicator definition

Interventions	Definition
Demand for FP satisfied ^{1,3,5}	% currently married women 15-49 years (y) with demand for family planning (FP) satisfied by modern methods
Iodized salt	% households using iodized salt
ANC first trimester	% women 15-49 y who received antenatal care (ANC) during the first trimester for the most recent live birth in the 5 y preceding the survey
≥ 4ANC¹	% women 15-49 y who received ≥4 ANC visits for the most recent live birth in the 5 y preceding the survey
Received MCP card¹⁰	% women 15-49 y who received a mother and child protection (MCP) card during pregnancy for the most recent live birth in the 5 y preceding the survey
Received IFA tab/syrup^{3,8}	% women 15-49 y who received IFA (given or purchased) during pregnancy for the most recent live birth in the 5 y preceding the survey
Tetanus injection¹	% women 15-49 y whose most recent live birth in the 5 y preceding the survey was protected against neonatal tetanus
Deworming- pregnancy^{3,8}	% women 15-49 y who took deworming medication during pregnancy for the most recent live birth in the 5 y preceding the survey
Weighing- pregnancy^{3,5,6,7}	% women 15-49 y who were weighed during ANC for the most recent live birth in the 5 y preceding the survey
Birth preparedness counselling^{1,2,3,4,5}	% women 15-49 y with a child 0-60 months (m) who had ≥1 contacts with a community health worker in the 3 m preceding the survey and were advised on birth preparedness
Breastfeeding counselling^{1,3,5,6,7}	% women 15-49 y who met with a community health worker in the last 3 m of pregnancy for the most recent live birth in the 5 y preceding the survey and were advised on breastfeeding
Counselling on keeping baby warm^{1,5,6,7}	% women 15-49 y who met with a community health worker in the last 3 m of pregnancy for the most recent live birth in the 5 y preceding the survey and were advised on keeping the baby warm
Cord care counselling^{5,6,7,10}	% women 15-49 y who met with a community health worker in the last 3 m of pregnancy for the most recent live birth in the 5 y preceding the survey and were advised on cord care
Food supplementation – pregnancy^{3,5}	% women 15-49 y with a child <6 y who received food supplements from ICDS during pregnancy
Health & nutrition education – pregnancy⁵	% women 15-49 y with a child <6 y who received health and nutrition education from ICDS during pregnancy
Malaria prevention- use of bed nets^{2,4,5,10}	% women 15-49 y who slept under a treated bed net during pregnancy of the most recent live birth in the 5 y preceding the survey
Institutional birth	% live births in the 5 y preceding the survey to women 15-49 y delivered in a health facility
Financial assistance (JSY)^{6,7,8,10}	% women 15-49 y who received financial assistance under Janani Suraksha Yojana (JSY) for the most recent live birth that took place in a health facility in the 5 y preceding the survey
Skilled birth attendant	% live births in the 5 y preceding the survey to women 15-49 y that were assisted by a skilled provider
Postnatal care for mothers¹⁰	% women 15-49 y who received postnatal care from a doctor/nurse/LHV/auxiliary nurse midwife (ANM)/midwife/other health personnel <2 days of delivery for the most recent live birth in the 5 y preceding the survey
Postnatal care for babies¹⁰	% most recent live births in the 5 y preceding the survey to women 15-49 y with a postnatal check for the newborn from a doctor/nurse/LHV/ANM/midwife/other health personnel <2 days of delivery
Food supplementation – postnatal^{3,5}	% women 15-49 y with a child <6 y who received food supplements from ICDS during breastfeeding
Health & nutrition education – postnatal^{3,5}	% women 15-49 y with a child <6 y who received health and nutrition education from ICDS during breastfeeding
Health checkup (ICDS)^{3,5}	% women 15-49 y with a child <6 y who received a health check-up from ICDS during breastfeeding
Full immunization	% children 12-23 m fully vaccinated based on information from either vaccination card or mother's recall
Vitamin A – early childhood¹	% children 9-35 m who received a vitamin A dose in the 6 m preceding the survey
Pediatric IFA^{3,4,5,10}	¹¹ % children 6-59 m who were given iron supplements in the 7 days preceding the survey ¹² % children 6-36 m who were given iron supplements in the 7 days preceding the survey
Deworming – early childhood^{3,4,5,10}	¹¹ % children 6-59 m who received deworming medication in the 6 m preceding the survey ¹² % children 6-36 m who received deworming medication in the 6 m preceding the survey
Care seeking for ARI	% children <5 y with fever or symptoms of ARI in the 2 weeks preceding the survey taken to a health facility or health provider
ORS during diarrhea	% children <5 y with diarrhea in the 2 weeks preceding the survey who received Oral Rehydration Solutions (ORS)
Zinc during diarrhea	% children <5 y with diarrhea in the 2 weeks preceding the survey who received zinc
Food supplementation (children 6-35 months)^{1,2,3,4,5}	% youngest children 6-35 m who received food supplements from ICDS in the 12 m preceding the survey
Weighing – early childhood^{3,5}	% children <5 y who were weighed at an anganwadi centre (AWC) or ICDS centre in the 12 m preceding the survey
Counselling on child growth^{3,5,10}	% mothers with a child <5 y who received counselling from an ICDS/anganwadi worker or ANM after they were weighed at an AWC in the 12 m preceding the survey
Preschool (AWC)^{3,5}	% children 36-71 m who went for early childhood care/preschool at an AWC in the 12 m preceding the survey
Health checkup (AWC)^{3,5}	% children <6 y who received health checkups from an AWC in the 12 m preceding the survey

Note: Unless specified, state and districts estimates taken from NFHS-3 national/state report for NFHS-3, NFHS-4 national/state report or NFHS-5 factsheet for NFHS-4, and NFHS-5 national/state report or factsheet for NFHS-5.

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⁹Indicator constructed following WHO guidelines

¹⁰Indicator not available in NFHS-3 and/or 4 tool or not comparable between NFHS-3/4 and 5

¹¹Definition as per NFHS-3 and 4 construction

¹²Definition as per NFHS-5 construction

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ABOUT POSHAN

Partnerships and Opportunities to Strengthen and Harmonize Actions for Nutrition in India (POSHAN) is a multi-year initiative that aims to support the use of data and evidence in decision-making for nutrition in India. It is supported by the Bill & Melinda Gates Foundation and led by IFPRI in India.

<http://poshan.ifpri.info/>

ABOUT DATA NOTES

POSHAN Data Notes focus on data visualization to highlight geographic and/or thematic issues related to nutrition in India. They draw on multiple sources of publically available data.

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