No. 71 | MARCH 2022   **KARNATAKA**

State Nutrition Profile: Karnataka

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 estimates using unit-level data, data from national and state reports from the National Family Health Survey (NFHS)-3 (2005-2006) and NFHS-4 (2015-2016), and data from state factsheets and reports from NFHS-5 (2019-2021). 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 number of districts in the state with public health concern as per the WHO guidelines.[1] The *Data Note* includes a color-coded dashboard to compare the coverage of nutrition interventions across all the districts in the state. It concludes with key takeaways for children, women, and men, and identifies areas where the state has potential to improve.
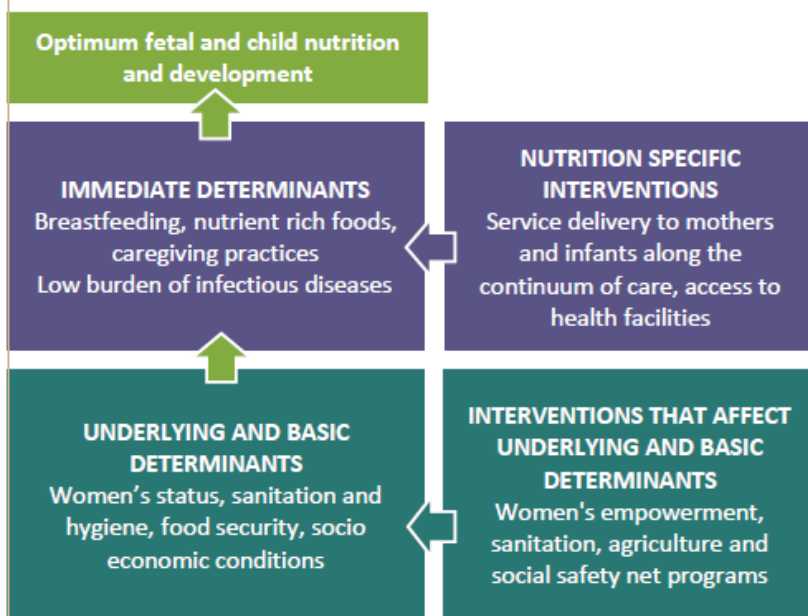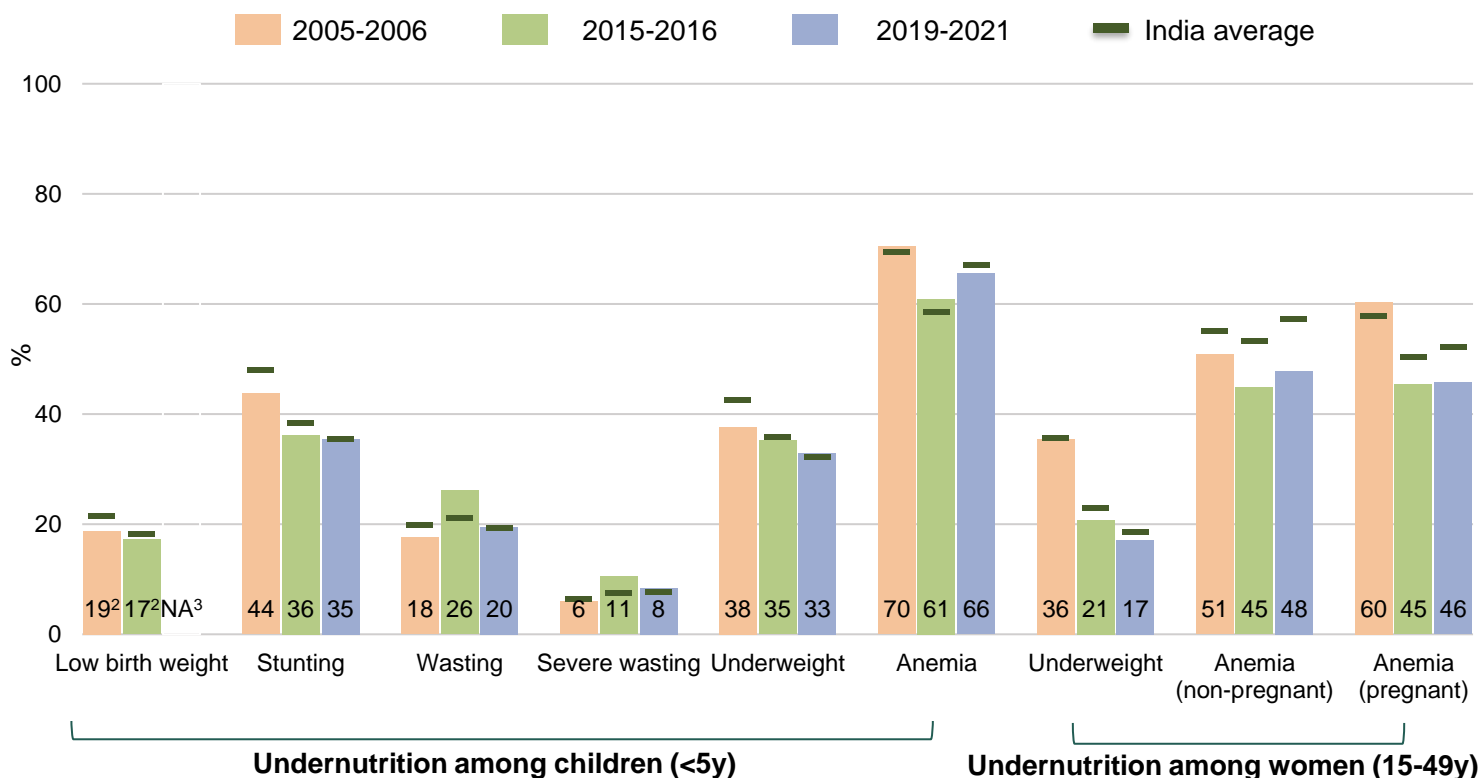
Optimum fetal and child nutrition and development

IMMEDIATE DETERMINANTS
Breastfeeding, nutrient rich foods, caregiving practices
Low burden of infectious diseases

NUTRITION SPECIFIC INTERVENTIONS
Service delivery to mothers and infants along the continuum of care, access to health facilities

UNDERLYING AND BASIC DETERMINANTS
Women's status, sanitation and hygiene, food security, socio economic conditions

INTERVENTIONS THAT AFFECT UNDERLYING AND BASIC DETERMINANTS
Women's empowerment, sanitation, agriculture and social safety net programs

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

Legend: 2005-2006 | 2015-2016 | 2019-2021 | India average

	Low birth weight	Stunting	Wasting	Severe wasting	Underweight	Anemia	Underweight	Anemia (non-pregnant)	Anemia (pregnant)
2005-2006	19[2]	44	18	6	38	70	36	51	60
2015-2016	17[2]	36	26	11	35	61	21	45	45
2019-2021	NA[3]	35	20	8	33	66	17	48	46

Undernutrition among children (<5y)   **Undernutrition among women (15-49y)**

Source: NFHS-3 (2005-2006) national report and data [IFPRI estimates] and NFHS-5 (2019-2021) national and state factsheets. Anemia among non-pregnant and pregnant women for 2005-2006 are IFPRI estimates using woman [1]WHO. 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). [2]In NFHS-3, 37.7% of data were missing and 5.7% of data were missing for NFHS-4. [3]NA refers to the unavailability of data for a particular indicator in the specified NFHS round.

Map 1 & 2. Number of stunted & anemic children <5y, 2019-2021
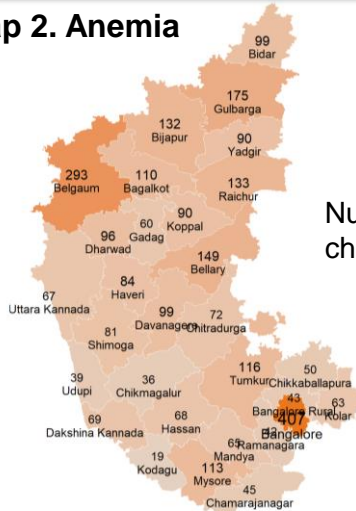
Map 1. Stunting
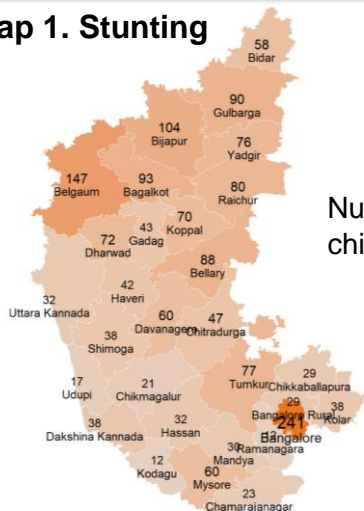
Number of stunted children[2] = 1,799,176

Note: Number in '000s in the above figure

Highest burden districts		
1	Bangalore	240,522
2	Belgaum	147,004
3	Bijapur	103,806
4	Bagalkot	92,909
5	Gulbarga	89,617

No. of districts with public health concern[1]: 29 of 30

Map 2. Anemia

Number of anemic children[2] = 3,004,538
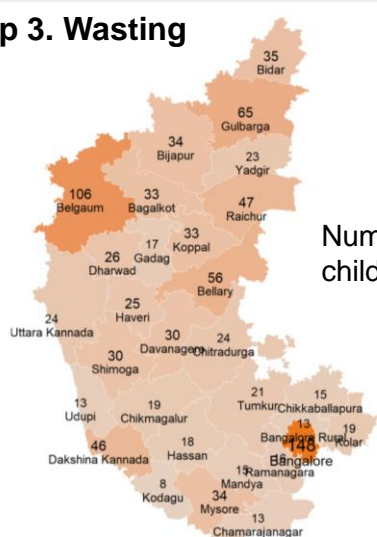
Note: Number in '000s in the above figure

Highest burden districts		
1	Bangalore	406,583
2	Belgaum	292,693
3	Gulbarga	175,241
4	Bellary	148,540
5	Raichur	132,959

No. of districts with public health concern[1]: 30 of 30

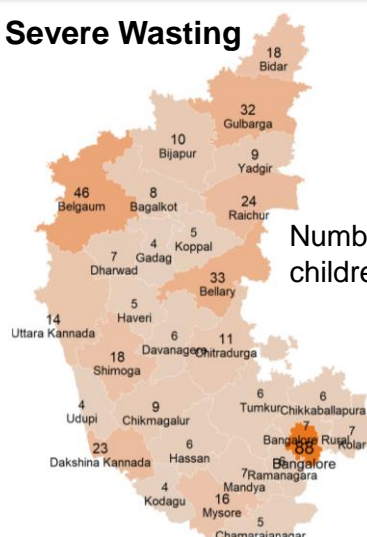# Map 3 & 4. Number of wasted children <5y, 2019-2021

Map 3. Wasting

Number of wasted children[2] = 1,003,306

Note: Number in '000s in the above figure

Highest burden districts		
1	Bangalore	147,541
2	Belgaum	105,771
3	Gulbarga	64,940
4	Bellary	56,099
5	Raichur	46,655

No. of districts with public health concern[1]: 30 of 30

Map 4. Severe Wasting

Number of severely wasted children[2] = 444,351

Note: Number in '000s in the above figure

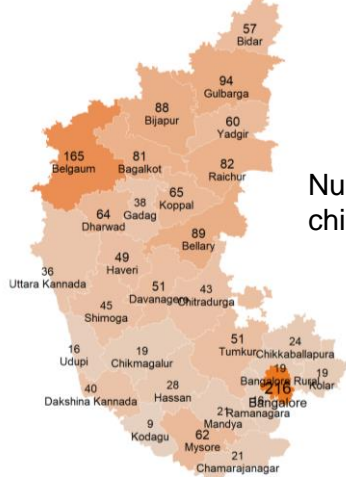| Highest burden districts		
1	Bangalore	87,602
2	Belgaum	45,715
3	Bellary	33,316
4	Gulbarga	31,691
5	Raichur	23,529

No. of districts with public health concern[1]: 30 of 30

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. [1]Public health concern is defined as ≥20% for stunting, ≥40% for anemia, ≥10% for wasting, and ≥2% for severe wasting (WHO 2011).
[2] The number of children <5 years is 5,132,244.

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

Map 5. Underweight children

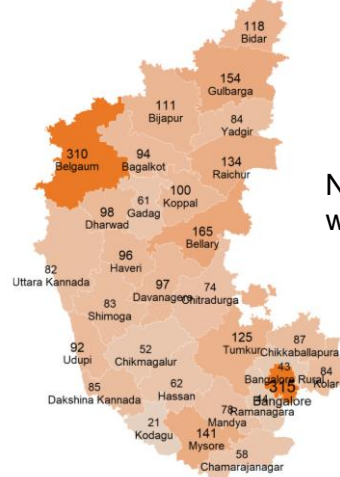

Number of underweight children[2] = 1,667,140

Note: Number in '000s in the above figure

Highest burden districts

1	Bangalore	215,932
2	Belgaum	165,379
3	Gulbarga	94,033
4	Bellary	89,415
5	Bijapur	88,201

No. of districts with public health concern[1]: 27 of 30

Map 6. Underweight women

Number of underweight women[2] = 3,148,209

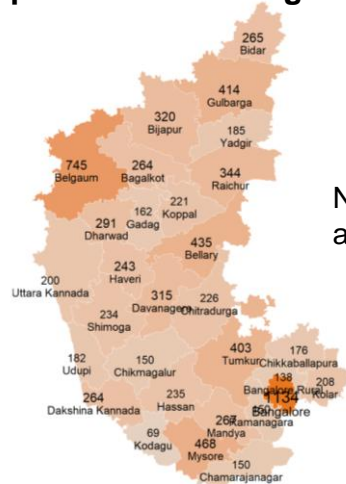Note: Number in '000s in the above figure

Highest burden districts

1	Bangalore	314,887
2	Belgaum	309,882
3	Bellary	164,512
4	Gulbarga	153,741
5	Mysore	141,254

No. of districts with public health concern[1]: 29 of 30

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

Map 7. Anemia among non-pregnant women
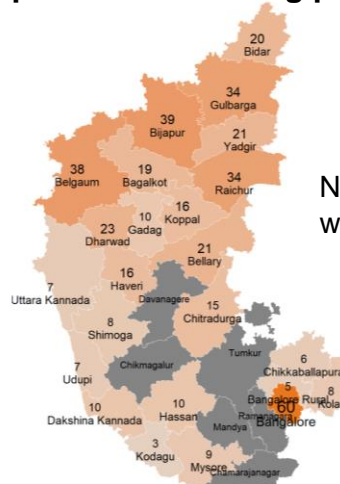

Number of non-pregnant anemic women[2] = 8,856,586

Note: Number in '000s in the above figure

Highest burden districts

1	Bangalore	1,133,592
2	Belgaum	745,391
3	Mysore	467,965
4	Bellary	434,995
5	Gulbarga	413,917

No. of districts with public health concern[1]: 27 of 30

Map 8. Anemia among pregnant women

Number of pregnant anemic women[2] = 439,219

Note: Number in '000s in the above figure

Highest burden districts

1	Bangalore	60,074
2	Bijapur	38,564
3	Belgaum	37,618
4	Gulbarga	34,398
5	Raichur	33,563

No. of districts with public health concern[1]: 16 of 24

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. [1]Public health concern is defined as ≥20% for underweight (children), ≥10% for underweight (women), ≥40% for anemia among non-pregnant women, and ≥40% for anemia among pregnant women (WHO 2011). [2]The total number of children <5 years is 5,132,244, pregnant women 15-49 years is 1,133,932, and non-pregnant women 15-49 years is 17,655,630. Note: Data are not available for 6 districts for anemia among pregnant women. Gray area in Map 8 indicates districts for which data are not available.

Figure 2. Trends in overweight/obesity & NCDs[1] 2005-2006, 2015-2016, 2019-2021

Legend: 2005-2006 | 2015-2016 | 2019-2021 | India average

% (y-axis: 0, 20, 40, 60, 80, 100)

Children (<5y)
- Overweight/obesity: 3, 3, 3

Women (15-49y)
- Overweight/obesity: 15, 23, 30
- Hypertension: [2]NA, 12, 25
- Diabetes: [2]NA, [2]NA, 14

Men (15-54y)
- Overweight/obesity: 11, 22, 31
- Hypertension: [2]NA, 33, 27
- Diabetes: [2]NA, [2]NA, 16
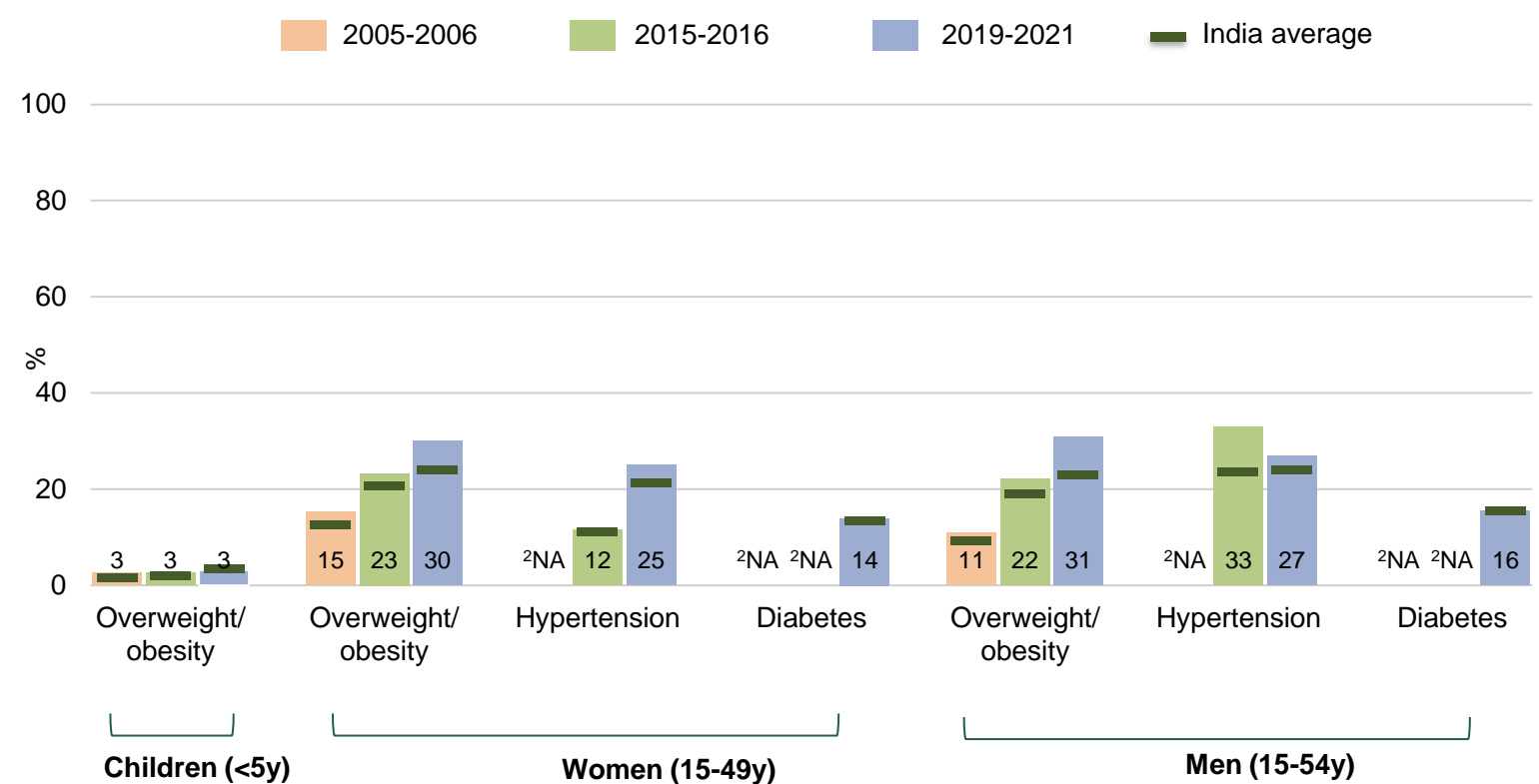
Table 1. Overweight/obesity & NCDs[1] at district-level 2015-2016, 2019-2021

Category	Outcomes	Worst performing districts (pp) _Difference between (2019-2021) & (2015-2016)[3]_	Best performing districts (pp) _Difference between (2019-2021) & (2015-2016)[3]_	Highest burden districts (thousands)[4] _2019-2021_	No of districts with public health concern[5] (total=30) _2019-2021_
Children <5 years	Overweight/obesity	D. Kannada[6]: +5.7 Chikmagalur: +5.7	Koppal: -5.0 Haveri: -3.1	Bangalore: 33 Belgaum: 13	0
Women (15-49 years)	Overweight/obesity	Chitradurga: +24.2 Gadag: +18.9	D. Kannada[6]: -3.9	Bangalore: 1261 Mysore: 350	28
	Hypertension	Bangalore: +18.5 Mandya: +18.4	_Not Applicable[7]_	Bangalore: 967 Belgaum: 271	24
	Diabetes	_NA[2]_		Bangalore: 609 Belgaum: 180	0
Men (15-54 years)	Overweight /obesity	_NA[2]_			
	Hypertension	Kodagu: +10.0 Belgaum: +9.8	Raichur: -20.3 U. Kannada[6]: -20.2	Bangalore: 1191 Belgaum: 331	28
	Diabetes	_NA[2]_		Bangalore: 756 Belgaum: 182	1

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. Hypertension among men are IFPRI estimates for NFHS-4 using man dataset. Hypertension among women is estimated at the district-level for NFHS-4 using woman dataset. pp: percentage points. [1]NCDs: non-communicable diseases. [2]NA refers to the 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. [3]The difference is calculated only between districts that are comparable between 2015-2016 and 2019-2021. [4]Burden: The headcount was calculated as the product of the overweight/obesity and NCDs 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. [5]Public health concern is defined as prevalence ≥15% for overweight/obesity (children), ≥20% for overweight/obesity (women and men), ≥20% hypertension (women and men), and ≥20% diabetes (women and men) (WHO 2011). [6]District codes: D. Kannada: Dakshina Kannada U. Kannada: Uttara Kannada. [7]Prevalence did not decrease in any of the districts.

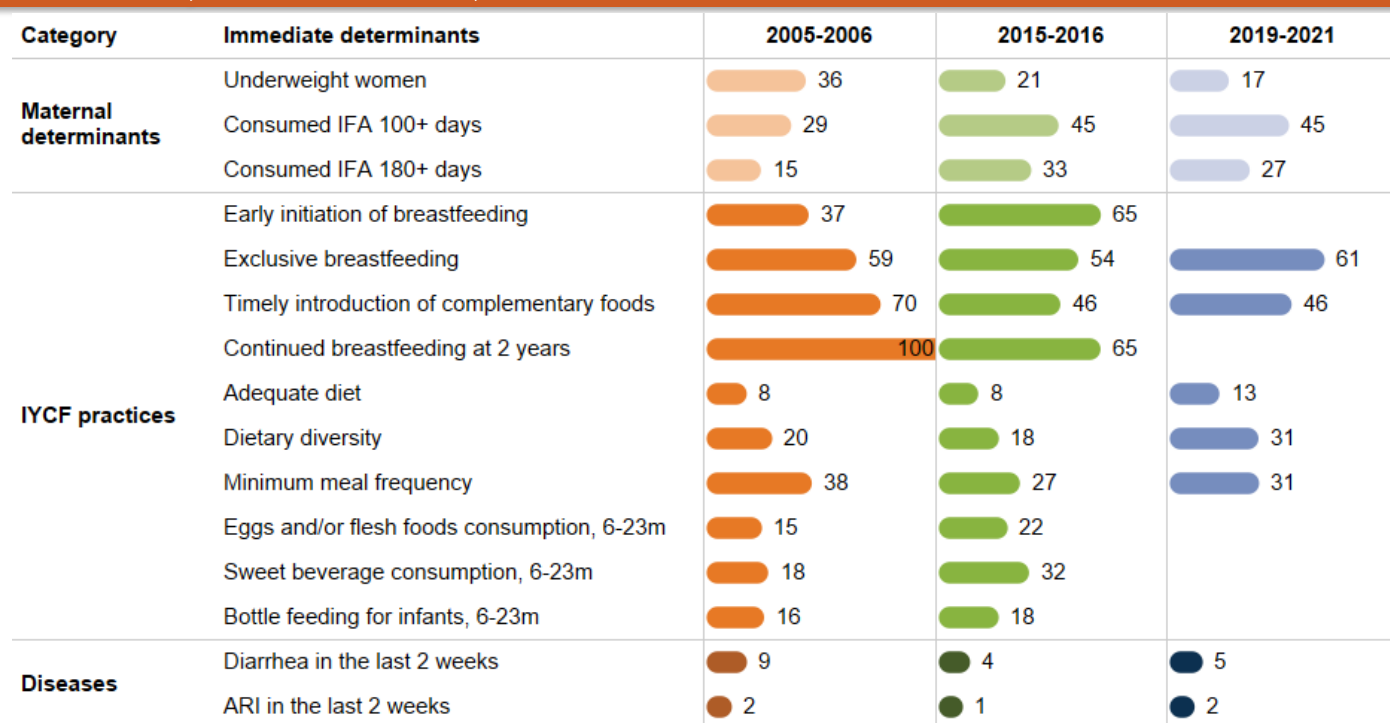# Figure 3. Trends in immediate determinants (%) 2005-2006, 2015-2016, 2019-2021

Category	Immediate determinants	2005-2006	2015-2016	2019-2021
Maternal determinants	Underweight women	36	21	17
	Consumed IFA 100+ days	29	45	45
	Consumed IFA 180+ days	15	33	27
IYCF practices	Early initiation of breastfeeding	37	65	
	Exclusive breastfeeding	59	54	61
	Timely introduction of complementary foods	70	46	46
	Continued breastfeeding at 2 years	100	65	
	Adequate diet	8	8	13
	Dietary diversity	20	18	31
	Minimum meal frequency	38	27	31
	Eggs and/or flesh foods consumption, 6-23m	15	22	
	Sweet beverage consumption, 6-23m	18	32	
	Bottle feeding for infants, 6-23m	16	18	
Diseases	Diarrhea in the last 2 weeks	9	4	5
	ARI in the last 2 weeks	2	1	2

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

Category	Immediate determinants	Worst performing districts (pp) *Difference between (2019-2021) & (2015-2016)[1]*	Best performing districts (pp) *Difference between (2019-2021) & (2015-2016)[1]*	Top coverage districts (%)[2] *2019-2021*
Maternal determinants	Underweight women	Raichur: +2.4 Belgaum: +1.6	U. Kannada[3]: -13.3 D. Kannada[3]: -13.0	Bangalore: 10.0 Hassan: 11.1
	Consumed IFA 100+ days	Davanagere: -40.5 Belgaum: -25.0	Mandya: +36.1 D.Kannada[3]: +28.0	D. Kannada[3]: 68.9 Bangalore R[3]: 67.0
IYCF practices	Early initiation of breastfeeding	*NA[4]*		
	Exclusive breastfeeding	Bagalkot: -20.2 Raichur: -8.6	Haveri: +28.9 Davanagere: +12.0	Davanagere: 80.8 Haveri: 80.0
	Timely introduction of complementary foods	*NA[4]*		
	Adequate diet	D. Kannada[3]: -13.7 Udupi: -8.5	Hassan: +24.6 Kolar: +15.6	Hassan: 29.1 Chitradurga: 27.2
Diseases	Diarrhea in the last two weeks	Gulbarga: +8.5 Bidar: +5.6	Mysore: -4.8 Hassan: -4.8	Dharwad: 1.9 Bangalore: 2.2
	ARI in the last two weeks	Chamarajanagar: +3.6 Shimoga: +3.3	Gadag: -5.4 Udupi: -3.4	3 Districts[5]: 0.0

Source: NFHS-3 (2005-2006) national and state reports and data [IFPRI estimates], NFHS-4 (2015-2016) state report and data [IFPRI estimates], and NFHS-5 factsheets (2019-2021). Adequate diet is estimated for NFHS-3 using last child data. Early initiation of breastfeeding, dietary diversity, minimum meal frequency, egg and/or flesh consumption, sweet beverage consumption, and bottle feeding of infants were estimated for NFHS-3 and -4 using last child data. Consumption of IFA 100+ days and consumption of IFA 180+ days were estimated for NFHS-3 using woman data. pp: percentage points.
Note: Data on early initiation of breastfeeding (children born in last 2 years), continued breastfeeding at 2 years, egg and/or flesh foods consumption, sweet beverage consumption, and bottle feeding of infants not available in NFHS-5 factsheets (2019-21)/state report. Definition of early initiation of breastfeeding is based on WHO guidelines. [1]The difference is calculated only between districts that are comparable between 2015-2016 and 2019-2021. [2]For all indicators, top coverage districts refer to the districts with the highest prevalence in immediate determinants, except for underweight women, diarrhea in the last two weeks, and ARI in the last two weeks, for which it refers to the districts with the lowest prevalence in coverage. [3]District codes: D. Kannada: Dakshina Kannada; U. Kannada: Uttara Kannada. Bangalore R: Bangalore Rural. [4]NA refers to the unavailability of data for a particular indicator in the specified NFHS round. [5]3 Districts: Dharwad, Bangalore, Koppal.

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

Category	Underlying determinants	2005-2006	2015-2016	2019-2021
Maternal determinants	Women with ≥10 years of education	28	45	50
	Women 20-24 years married before age of 18 years	41	21	21
	Women 15-19 years with child or pregnant		8	5
Household determinants	HHs with improved drinking water source	86	95	95
	HHs using improved sanitation facility	34	58	75
	HHs with hand washing facility		71	
	Open defecation	53	34	18
	Safe disposal of feces	21	42	
	HHs with BPL card	47	68	79
	HHs with electricity	89	98	99

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]
		Difference between (2019-2021) & (2015-2016)[1]	*Difference between (2019-2021) & (2015-2016)[1]*	*2019-2021*
Maternal determinants	Women with ≥10 years education	Bidar: -1.4	Tumkur: +14.6 Bellary: +13.1	Bangalore: 70.1 D. Kannada[4]: 62.8
	Women 20-24 years married before age of 18 years	Tumkur: +7.7 Bijapur: +7.4	Chamarajanagar: -9.7 Ramanagara: -9.2	Udupi: 4.4 D. Kannada[4]: 4.9
	Women 15-19 years with child or pregnant	Raichur: +5.9 Kolar: +2.2	Bellary: -10.1 Mysore: -10.0	Udupi: 0.7 D. Kannada[4]: 1.0
Household determinants	HHs with improved drinking water source	Dharwad: -10.1 Gulbarga: -6.6	Udupi: +16.2 U. Kannada[4]: +14.9	Chamarajanagar: 99.9 Bangalore: 99.2
	HHs using improved sanitation facility	*Not applicable[3]*	Chamarajanagar: +38.8 Tumkur: +33.5	D. Kannada[4]: 97.1 Udupi: 94.5
	HHs with electricity	Bangalore: -0.8 Mandya: -0.4	Chamarajanagar: +3.5 Chikmagalur: +3.2	Chikkaballapura: 99.9 D. Kannada[4]: 99.8

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 factsheets and report. Women 20-24 years married before age 18 was estimated for NFHS-3 using women data. Note: Safe disposal of feces not available in NFHS-5 factsheets (2019-21)/state report and data on HHs with hand washing facility not available in NFHS-3 (2005-06) and NFHS-5 factsheets (2019-21)/state report. Data on women 15-19 years with child or pregnant not available in NFHS-3 (2005-06).

[1]The difference is calculated only between districts that are comparable between 2015-2016 and 2019-2021.

[2]For 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.

[3]Prevalence did not increase or decrease in any of the districts.

[4]District codes: D. Kannada: Dakshina Kannada. U. Kannada: Uttara Kannada.

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

Category	Intervention	2005-2006	2015-2016	2019-2021
Pre and during pregnancy	Demand for FP satisfied	87	83	91
	Iodized salt	66	87	93
	ANC first trimester	71	66	71
	≥ 4ANC		70	71
	Received MCP card	47	89	98
	Received IFA tab/syrup	74	84	89
	Tetanus injection	79	88	94
	Deworming	7	32	45
	Weighing	81	99	99
	Birth preparedness counselling	2		
	Breastfeeding counselling	18	86	96
	Counselling on keeping baby warm		87	96
	Cord care counselling		83	94
	Food supplementation	30	62	82
	Health & nutrition education	21	49	78
	Malaria prevention- use of bed nets		50	
Delivery and post-natal	Institutional birth	65	94	97
	Financial assistance (JSY)			11
	Skilled birth attendant	70	94	94
	Postnatal care for mothers	56	66	87
	Postnatal care for babies	1	22	85
	Food supplementation	18	54	80
	Health & nutrition education	13	46	76
	Health checkup (ICDS)	11	49	78
Childhood	Full immunization	55	63	84
	Vitamin A	17	82	86
	Pediatric IFA	15	50	61
	Deworming	10	47	57
	Care seeking for ARI	69	77	66
	ORS during diarrhea	32	53	71
	Zinc during diarrhea	1	34	45
	Food supplementation (6-35 months)	19	65	
	Weighing	18	54	77
	Counselling on child growth	53	63	81
	Preschool (AWC)	33	46	69
	Health checkup (AWC)	17	52	75

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 and report.
Note 1: Received MCP card, birth preparedness counselling, breastfeeding counselling, counselling on keeping baby warm, cord care counselling, and postnatal care for mothers was estimated for NFHS-3 using woman data. Malaria prevention-use of bed nets was estimated for NFHS-4 using woman data. Vitamin A-early childhood was estimated for NFHS-3 using last child data. Postnatal care for babies, food supplementation-early childhood, pediatric IFA, and deworming-early childhood were estimated for NFHS-3 and 4 using last child data. Note 2: The following information is not available in the NFHS-5 factsheets and state reports (2019-21): birth preparedness counselling, malaria prevention, and food supplementation (6-35m). Information on counselling on keeping baby warm, cord care, use of bed nets during pregnancy, and financial assistance under JSY are not available in NFHS-3 data (2005-06). Note 3: Data on demand for family planning satisfied, received IFA, deworming, weighing, counselling on breastfeeding, keeping baby warm, cord care during pregnancy, food supplementation, health and nutrition education during pregnancy and post-natal phases, financial assistance under JSY, pediatric IFA, deworming during early childhood, weight measurement during childhood, and counselling on child growth for 2019-2021 are taken from NFHS-5 state reports. Note 4: Refer to district dashboard for the inter-district variability in the coverage of interventions.

Intervention coverage at district-level, 2019-2021

Legend: <20% | 20-<40% | 40-<60% | 60-<80% | >=80% | Not Available

District name	Pre-pregnancy: Demand for FP satisfied	Pre-pregnancy: Iodized salt	Pregnancy: ANC first trimester	Pregnancy: ≥4 ANC	Pregnancy: Received MCP card	Pregnancy: Received IFA tab/syrup	Pregnancy: Tetanus Injection	Pregnancy: Deworming	Pregnancy: Weighing	Pregnancy: Birth preparedness counselling	Pregnancy: Breastfeeding counselling	Pregnancy: Counselling on keeping baby warm	Pregnancy: Cord care counselling	Pregnancy: Food supplementation	Pregnancy: Health & nutrition education	Pregnancy: Malaria prevention-use of bed nets	Delivery: Institutional birth	Delivery: Financial assistance (JSY)	Delivery: Skilled birth attendant	Delivery: Postnatal care for mothers	Delivery: Postnatal care for babies	Delivery: Food supplementation	Delivery: Health & nutrition education	Delivery: Health checkup	Early: Full immunization	Early: Vitamin A	Early: Paediatric IFA	Early: Deworming	Early: Care seeking for ARI	Early: ORS during diarrhea	Early: Zinc during diarrhea	Early: Food supplementation (6-35 months)	Early: Weighing	Early: Counselling on child growth	Early: Preschool at AWC	Early: Health checkup
KARNATAKA	90.7	92.8	71.0	70.9	97.6	88.7	93.6	44.6	99.4		95.9	95.6	93.5	82.0	78.2		97.0	10.6	93.8	87.4	85.5	79.9	75.9	77.6	84.1	86.2	60.8	56.5	65.7	71.3	45.5		76.5	81.3	69.0	74.8
Bagalkot		81.3	78.2	76.2	98.7	83.5	94.2	28.0									95.2	16.7	91.4	89.0	86.7				78.6	73.0			79.1							
Bangalore		99.4	75.3	74.6	98.0	98.1	98.4	56.4									99.3	2.4	94.4	88.0	88.2				78.2	86.9										
Bangalore Rural		95.6	81.8	90.9	98.4	91.6	100.0	52.9									100.0	16.6	97.9	91.7	91.0				92.7	84.9										
Belgaum		95.2	71.2	63.7	96.1	84.2	94.4	47.4									97.5	8.2	96.4	87.0	85.6				81.4	91.9			66.6							
Bellary		84.7	67.5	56.4	98.1	77.7	90.5	42.4									95.7	12.9	96.0	86.6	84.2				71.5	73.7			67.0							
Bidar		97.7	62.7	55.3	96.8	85.2	97.4	38.1									99.0	8.1	91.7	89.6	86.5				74.8	80.5			56.9	83.4	56.8					
Bijapur		92.3	60.3	56.4	91.1	87.9	93.5	23.1									91.8	3.5	90.0	74.4	74.8				71.1	83.4			68.7	54.8	43.5					
Chamarajanagar		98.0	83.2	84.1	100.0	84.7	96.6	56.0									100.0	20.9	96.7	94.2	93.2				93.3	93.6			84.7							
Chikkaballapura		95.0	82.6	90.5	98.2	84.5	94.7	56.6									99.0	15.4	97.5	91.2	90.5				76.6	84.8										
Chikmagalur		96.8	69.5	74.3	99.1	92.6	93.1	43.5									98.4	16.4	98.7	90.9	91.4				91.0	85.5			80.2							
Chitradurga		96.4	66.3	79.3	99.1	91.6	93.9	60.2									98.3	14.9	95.1	95.2	94.3				94.6	93.5			67.2							
Dakshina Kannada		96.9	86.1	82.0	98.3	92.0	97.5	37.8									100.0	4.2	91.9	83.5	83.5				86.8	88.7										
Davanagere		94.9	63.0	63.1	96.3	90.0	86.4	31.9									98.3	20.0	88.1	78.9	74.0				79.4	78.7			44.6	54.5	11.1					
Dharwad		92.3	78.7	85.2	96.9	86.6	92.1	34.6									99.7	11.7	99.0	98.0	95.5				87.6	83.5			82.1							
Gadag		77.1	52.6	68.7	97.0	85.9	93.3	40.1									96.2	15.2	98.2	84.7	83.4				74.3	72.0			71.2	79.8	36.9					
Gulbarga		92.2	59.3	53.6	95.1	82.3	90.8	32.7									88.7	6.1	87.1	79.6	78.1				75.3	94.5			49.9	68.9	53.4					
Hassan		98.5	67.6	58.7	97.8	91.2	88.6	67.2									100.0	12.3	97.1	92.6	86.1				96.8	91.7										
Haveri		87.9	73.3	74.4	98.8	88.1	88.0	50.1									97.2	22.9	95.8	92.4	85.4				95.7	78.4			68.0	53.8	28.0					
Kodagu		98.5	70.6	70.6	97.8	92.6	95.5	50.8									98.4	13.4	94.1	93.3	91.9				90.6	90.7										
Kolar		94.7	78.0	90.9	99.1	89.7	97.1	50.6									99.6	13.4	99.3	95.7	95.0				86.3	87.5										
Koppal		47.9	52.4	50.7	100.0	82.3	84.5	22.6									90.7	11.6	89.2	80.7	79.5				84.8	70.9			58.4	55.9	22.9					
Mandya		97.7	85.6		100.0	93.9	95.3	42.2									99.5	8.5	97.3	95.5	95.1				93.9	94.9										
Mysore		98.0	82.0	85.7	98.4	96.2	94.6	49.5									100.0	10.6	97.8	93.5	88.6				97.2	98.1										
Raichur		73.3	66.4	67.5	97.1	79.7	89.0	42.9									88.9	16.1	83.3	76.1	73.3				80.2	83.0			57.0							
Ramanagara		95.7	91.8	88.7	100.0	84.8	94.7	49.7									100.0	14.0	100.0	87.0	84.8				100.0	87.6										
Shimoga		91.0	90.1	79.4	98.5	91.5	96.9	48.3									99.7	17.6	96.5	91.5	89.7				96.1	92.2			77.3							
Tumkur		94.7	68.6	80.4	99.3	92.7	92.7	55.0									100.0	6.8	93.1	95.2	90.2				97.7	96.8										
Udupi		95.6	75.1	59.4	99.2	96.2	94.8	36.8									98.9	4.5	90.2	89.2	87.7				89.9	88.1			49.4							
Uttara Kannada		94.3	80.4	57.9	97.9	87.8	92.2	52.5									99.3	14.1	99.2	87.4	87.8				93.6	89.7			62.0							
Yadgir		76.3	57.4	63.6	97.9	79.1	79.4	27.7									93.3	13.5	93.0	73.3	72.2				82.6	77.7			80.8							

Source: NFHS-5 district factsheets and state reports (2019-21).

Note 1: Data on received IFA tab/syrup, deworming during pregnancy and financial assistance (JSY) for 2019-21 are taken from NFHS-5 factsheets (2019-21).

Note 2: The following information is not available in the NFHS-5 factsheets and state reports (2019-21): (1) Information on preconception and pregnancy-related indicators, including demand for FP satisfied, weighing, birth preparedness and breastfeeding counselling, counselling on keeping baby warm, cord care counselling, food supplementation, health and nutrition education, and malaria prevention; (2) lactation-related indicators, including food supplementation, health and nutrition education, and health checkups; and (3) early childhood-related indicators, including pediatric IFA, deworming, food supplementation (6-35m), preschool attendance, health checkups, weighing and counselling on child growth.

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

Category	Interventions	Worst performing districts (pp)	Best performing districts (pp)	Top coverage districts (%)
		Difference between (2019-2021) & (2015-2016)[1]	*Difference between (2019-2021) & (2015-2016)[1]*	*2019-2021*
Pregnancy	ANC first trimester	Davanagere: -20.6 Shimoga: -13.6	Bangalore: +24.0 Ramanagara: +23.7	Ramanagara.: 91.8 D. Kannada[2]: 86.1
	≥4 ANC visits	Gulbarga: -31.0 Davanagere: -25.0	Bangalore: +26.5 Mysore: +19.9	Bangalore R[2].: 90.9 Kolar: 90.9
	Received MCP Card	Chikkaballapura: -1.1	Gulbarga: +19.1 Bangalore: +18.6	4 Districts[4]: 100.0
	Tetanus injection	Yadgir: -10.6 Davanagere: -6.6	Shimoga: +26.5 D.Kannada[2]: +14.8	Bangalore R[2].: 100.0 Mandya: 99.3
Delivery and post-natal	Institutional birth	Gulbarga: -2.4	Bellary: +9.8 Raichur: +9.2	7 Districts[5]: 100.0
	Skilled birth attendant	Davanagere: -10.6 Gulbarga: -9.7	Chikmagalur: +15.5 U. Kannada[2]: +14.6	Ramanagara: 100.0 Kolar: 99.3
	Postnatal care for mothers	Belgaum: -3.3	Bagalkot: +42.3 Bellary: +42.0	Dharwad: 98.0 Kolar: 95.7
	Postnatal care for babies	*Not Applicable[3]*	Dharwad: +80.5 Chikkaballapura: +79.2	Dharwad: 95.5 Mandya: 95.1
Early childhood	Full immunization	*Not Applicable[3]*	Shimoga: +50.5 Mysore: +50.5	Ramanagara: 100.0 Tumkur: 97.7
	Vitamin A supplementation	Koppal: -18.6 Bagalkot: -18.5	Mysore: +21.8 Tumkur: +19.2	Mysore: 98.1 Tumkur: 96.8
	Care seeking for ARI	Udupi: -33.9 Belgaum: -26.3	Chamarajanagar:+28.5 Shimoga: +9.3	Chamarajanagar: 84.7 Dharwad: 82.1
	ORS treatment during diarrhea	Gadag: -7.2	*Not Applicable[3]*	Bidar: 83.4 Gadag: 79.8
	Zinc treatment during diarrhea	Gadag: -45.5	*Not Applicable[3]*	Bidar: 56.8 Gulbarga: 53.4

Key takeaways

Children: Stunting and underweight prevalence declined by 8 percentage points (pp) and 3pp between 2006 and 2016 and by 1pp and 2pp between 2016 and 2021, respectively. Wasting increased by 8pp between 2006 and 2016 and declined by 6pp between 2016 and 2021. Anemia prevalence declined by 9pp between 2006 and 2016 but increased by 5pp between 2016 and 2021. Overweight/obesity prevalence remained stable between 2006 and 2021.

Women: Underweight prevalence declined by 15pp between 2006 and 2016 and by 4pp between 2016 and 2021. Anemia among non-pregnant and pregnant women declined by 6pp and 15pp between 2006 and 2016 but it increased by 3pp and 1pp between 2016 and 2021, respectively. Overweight/obesity prevalence increased by 7-8pp between 2006 and 2016 and between 2016 and 2021.

Men: Overweight/obesity prevalence increased by 11pp between 2006 to 2016 and by 9pp between 2016 and 2021.

Attention is needed to improve (%s in 2021):
- *Outcomes*: Stunting (35%); anemia in children (66%); anemia in non-pregnant (48%); and pregnant (46%) women
- *Immediate determinants:* IFA 180+ days (27%); adequate diet (13%)
- *Underlying determinants:* Women with ≥10 years education (50%)
- *Coverage of interventions:* Deworming-women (45%); financial assistance-JSY (11%); zinc during diarrhea (45%)

Indicator definition

Nutrition outcomes	Definition
Low birth weight$^{\$\%}$	Percentage of live births in the five years preceding the survey with a reported birth weight less than 2.5 kg, based on either a written record or the mother's recall
Stunting among children	Percentage of children aged 0-59 months who are stunted i.e., height-for-age z score < -2SD
Wasting among children	Percentage of children aged 0-59 months who are wasted i.e., weight-for-height z score < -2SD
Severe wasting among children	Percentage of children aged 0-59 months who are wasted i.e., weight-for-height z score < -3SD
Underweight children	Percentage of children aged 0-59 months who are underweight i.e., weight-for-age z score < -2SD
Anemia among children	Percentage of children aged 6-59 months who are anemic i.e., (Hb <11.0 g/dl)
Underweight women	Percentage of women aged 15-49 whose Body Mass Index (BMI) is below normal (BMI <18.5 kg/m^2); sample excluded pregnant women and women with a birth in the preceding 2 months.
Anemia among non-pregnant women[*]	Percentage of non-pregnant women aged 15-49 who are anemic (<12.0 g/dl)
Anemia among pregnant women[*]	Percentage of pregnant women aged 15-49 who are anemic (<11.0 g/dl)
Overweight/obesity - children	Percentage of children aged 0-59 months who are overweight i.e., weight-for-height z score > 2SD
Overweight/obesity - women	Percentage of women aged 15-49 who are overweight or obese (BMI ≥25.0 kg/m2); sample excluded pregnant women and women with a birth in the preceding 2 months.
Overweight/obesity – men	Percentage of men aged 15-49 who are overweight or obese (BMI ≥25.0 kg/m^2)
Hypertension among women[^*%]	Percentage of women aged 15-49 with elevated blood pressure (Systolic ≥140 mm Hg or diastolic ≥90 mm Hg) or is currently taking medication to control blood pressure.
Hypertension among men[^*]	Percentage of men aged 15-54 with elevated blood pressure (Systolic ≥140 mm Hg or diastolic ≥90 mm Hg) or is currently taking medication to control blood pressure.
Diabetes among women[^0]	Percentage of women aged 15-49 with high (>140 mg/dl) or very high (>160 mg/dl) blood sugar or taking medicine to control blood sugar.
Diabetes among men[^0]	Percentage of men aged 15-54 with high (>140 mg/dl) or very high (>160 mg/dl) blood sugar or taking medicine to control blood sugar.

Immediate determinants	
Underweight women	Percentage of women aged 15-49 whose Body Mass Index (BMI) is below normal (BMI <18.5 kg/m^2); sample excluded pregnant women and women with a birth in the preceding 2 months.
Consumed IFA 100+ days[*]	Percentage of mothers aged 15-49 who consumed iron folic acid for 100 days or more during the last pregnancy in last five years preceding the survey
Consumed IFA 180+ days[*]	Percentage of mothers aged 15-49 who consumed iron folic acid for 180 days or more during the last pregnancy in last five years preceding the survey
Early initiation of breastfeeding[#*]	Percentage of children breastfed within one hour of birth for the last child born in the 2 years before the survey
Exclusive breastfeeding	Percentage of youngest children under age 6 months living with mother who were exclusively breastfed
Timely introduction of complementary foods	Percentage of youngest children aged 6-8 months living with mother who received solid or semi-solid food and breastmilk
Continued breastfeeding at 2 years[$*%]	Percentage of youngest children 12–23 months of age living with mother who were fed breast milk during the previous day
Adequate diet[*]	Percentage of youngest children 6–23 months of age who consumed a minimum acceptable diet during the previous day
Dietary diversity[*@]	Percentage of youngest children 6-23 months of age who were fed a diet that met minimum dietary diversity during the previous day.
Minimum meal frequency[*@]	Percentage of youngest children 6-23 months of age who were fed the minimum recommended number of times during the previous day
Eggs and/or flesh foods consumption[$*#]	Percentage of youngest children 6–23 months of age who consumed egg and/or flesh food during the previous day
Sweet beverage[$*#]	Percentage of youngest children 6–23 months of age who consumed a sweet beverage during the previous day
Bottle feeding for infants[$*#]	Percentage of youngest children 0–23 months of age who were fed from a bottle with a nipple during the previous day
Diarrhea in the last two weeks	Percentage of children under age 5 who had diarrhea in the 2 weeks preceding the survey
ARI in the last two weeks	Percentage of children under age 5 who had symptoms of acute respiratory infection (ARI) in the 2 weeks preceding the survey

Underlying determinants	
Women with ≥10 years education	Percentage of women aged 15-49 with 10 or more years of schooling
Women 20-24 years married before age of 18 years[*]	Percentage of women aged 20-24 years who were married before age 18 years
Women 15-19 years with child or pregnant[^]	Percentage of currently married women aged 15-49 who had their first birth before age 20 years and in the five years preceding the survey
HHs with improved drinking water source	Population living in households with an improved drinking-water source
HHs using improved sanitation facility	Population living in households that use an improved sanitation facility
HHs with hand washing facility[^$]	Percentage of households in which a place for washing hands was observed.
Open defecation[@%]	Percentage of households that have no toilet facility/defecates in open
Safe disposal of feces[$%]	Percentage of youngest children living with mother whose stools were disposed of safely
HHs with BPL card[@%]	Percentage of households with BPL card
HHs with electricity	Population living in households with electricity

Note: Unless specified, indicators values for NFHS-3 taken from either NFHS-3 national or state reports.
[^]Indicator cannot be constructed using unit-level NFHS-3 data. [0]Indicator cannot be constructed using unit-level NFHS-4 data. [$]Indicator not available in NFHS-5 factsheet/report. [@]Indicator not available in NFHS-5 factsheet but in NFHS-5 report. [%]Indicator not available in NFHS-5 factsheet but available in NFHS-4 report. [*]Indicator estimated using NFHS-3 and/or NFHS-4 unit-level data. [#]Indicator constructed based on WHO guidelines.

Indicator definition

Interventions	Definition
Demand for FP satisfied@%	Percentage of currently married women aged 15-49 with demand for family planning satisfied by modern methods
Iodized salt	Percentage of households using iodized salt
ANC first trimester	Percentage of women (15-49 years of age) attended by any provider during the first trimester of pregnancy that led to the birth of the youngest child in the last 2 years
≥ 4ANC^	Percentage of mothers aged 15-49 who had at least 4 antenatal care visits for last birth in the 5 years before the survey
Received MCP card	Percentage of mothers who registered last pregnancy in the 5 years preceding the survey for which she received a Mother and Child Protection (MCP) card
Received IFA tab/syrup@%	Percentage of women who received IFA (given or purchased) tablets during the pregnancy for their most recent live birth in the 5 years preceding the survey
Tetanus injection	Percentage of women whose last birth was protected against neonatal tetanus (for last birth in the five years preceding the survey)
Deworming- pregnancy@%	Percentage of women who took an intestinal parasite drug during the pregnancy for their most recent live birth in the 5 years preceding the survey
Weighing- pregnancy@%	Percentage of women aged 15-49 with a live birth in the five years preceding the survey who were weighed during ANC for the last birth
Birth preparedness counselling0$	Percentage of women who had at least one contact with a health worker in the three months preceding the survey and were counselled on birth preparedness (for the last pregnancy in the five years preceding the survey)
Breastfeeding counselling@%	Percentage of women who met with a community health worker in the last three months of pregnancy and received advice on breastfeeding (for the last pregnancy in the five years preceding the survey)
Counselling on keeping baby warm^@%	Percentage of women who met with a community health worker in the last three months of pregnancy and received advice on keeping the baby warm for their most recent live birth in the five years preceding the survey
Cord care counselling^@%	Percentage of women who met with a community health worker in the last three months of pregnancy and received advice on cord care for their most recent live birth in the five years preceding the survey
Food supplementation - pregnancy@%	Among children under 6 years, percentage whose mother received specific benefits from AWC during pregnancy: supplementary food
Health & nutrition education – pregnancy@%	Among children under 6 years, percentage whose mother received specific benefits from AWC during pregnancy: health and nutrition education
Malaria prevention- use of bed nets^$*	Percentage of women who used mosquito net during the pregnancy for their most recent live birth in the 5 years preceding the survey
Institutional birth	Percentage of live births to women aged 15-49 in the five years preceding the survey that took place in a health/institutional facility
Financial assistance (JSY) ^@	Percentage of women who received financial assistance under JSY for their most recent live birth that took place in institutional facility in the 5 years preceding the survey
Skilled birth attendant	Percentage of births attended by skilled health personnel for births in the 5 years before the survey
Postnatal care for mothers*	Percentage of mothers who received postnatal care from a doctor/nurse/LHV/ANM/midwife/other health personnel within 2 days of delivery for their most recent live birth in the five years preceding the survey
Postnatal care for babies*	Percentage of children who received postnatal care from a doctor /nurse /LHV /ANM /midwife /other health personnel within 2 days of delivery for last birth in the 5 years before the survey
Food supplementation – postnatal@%	Among children under 6 years, percentage whose mother received specific benefits from AWC while breastfeeding: supplementary food
Health & nutrition education – postnatal@%	Among children under 6 years, percentage whose mother received specific benefits from AWC while breastfeeding: health and nutrition education
Health checkup (ICDS)@%	Among children under 6 years, percentage whose mother received specific benefits from AWC while breastfeeding: health checkup.
Full immunization	Percentage of children aged 12-23 months fully vaccinated based on information from either vaccination card or mother's recall
Vitamin A – early childhood*	Percentage of children aged 9-35 months who received a vitamin A dose in the last 6 months
Pediatric IFA*@%	Percentage of youngest children aged 6-23 months who received iron supplements in the past 7 days preceding the survey.
Deworming – early childhood*@%	Percentage of youngest children aged 6-23 months who received deworming tablets in the last 6 months preceding the survey.
Care seeking for ARI	Percentage of children under age 5 years with fever or symptoms of ARI in the 2 weeks preceding the survey taken to a health facility or health provider
ORS during diarrhea	Percentage of children under age 5 years with diarrhea in the 2 weeks preceding the survey who received ORS
Zinc during diarrhea	Percentage of children under age 5 years with diarrhea in the 2 weeks preceding the survey who received zinc
Food supplementation (children 6-35 months) $*	Percentage of youngest children aged 6-35 months who received food supplements from AWC in the 12 months preceding the survey
Weighing – early childhood@%	Percentage of youngest children under age 5 who were weighed at AWC in the 12 months preceding the survey
Counselling on child growth@%	Percentage of youngest children under age 5 whose mother received counselling from an AWC after child was weighed in the 12 months preceding the survey
Preschool at AWC@%	Percentage of children age 36-71 months who went for early childhood care/preschool at an AWC in the 12 months preceding the survey.
Health checkup (AWC)@%	Percentage of children age under 6 years who received health checkups from an AWC in the 12 months preceding the survey

Note: Unless specified, indicators values for NFHS-3 taken from either NFHS-3 national or state reports.
^Indicator cannot be constructed using unit-level NFHS-3 data. 0Indicator cannot be constructed using unit-level NFHS-4 data. $Indicator not available in NFHS-5 factsheet/report. @Indicator not available in NFHS-5 factsheet but in NFHS-5 report. %Indicator not available in NFHS-5 factsheet but available in NFHS-4 report. *Indicator estimated using NFHS-3 and/or NFHS-4 unit-level data. #Indicator constructed based on WHO guidelines.

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Disclaimer: The maps used in this Data Note are based on the districts in NFHS-5 factsheets/reports . The boundaries shown do not imply any official endorsement or acceptance by IFPRI.

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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