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Partnerships and Opportunities to Strengthen and Harmonize Actions for Nutrition in India

Policy Note

No. 29 | OCTOBER 2017

Improving Nutrition in Himachal Pradesh

Insights from Examining Trends in Outcomes, Determinants and Interventions between 2006 and 2016

INTRODUCTION

India has made considerable progress in child nutrition outcomes in the last decade. These rates of improvement, however, have been highly variable across the states, mostly due to variabilities in state-level changes in the determinants of nutrition and in the coverage of health and nutrition interventions. Although all the states operate under a similar national policy and programmatic environment, the variability in trends in nutritional outcomes points to state-specific factors. An understanding of such factors can facilitate both state-specific learning and cross-state learning, and assist in identifying strategies to help India accelerate progress in nutrition. In a series of *Policy Notes*, we examine the state-specific trends in nutrition outcomes, determinants and the coverage of interventions, with the overall goal of supporting the state. This *Policy Note* focuses on Himachal Pradesh.

Himachal Pradesh is a north Indian state, situated in the Himalayan mountain range. It is home to 6.8 million people, and has a population density of 123 people per square kilometer. The sex ratio of the state is 972 females per 1000 males (Census of India 2011). The adult literacy rate in the state is 82.8 percent. The state is divided into 12 districts, 52 sub divisions, 75 tehsils and 34 sub tehsils (Government of Himachal Pradesh 2017).

The purpose of this *Policy Note* is to examine the trends in undernutrition in Himachal Pradesh and to document trends and geographic variability in the major determinants of nutrition and the coverage of key nutrition and health interventions. In doing this analysis, we aim to highlight the key areas of action to improve nutrition in Himachal Pradesh.

METHODS

We used summary data from the recently released National Family Health Survey-4 (NFHS-4 2015–16) factsheets (International Institute for Population Sciences 2017) and data from NFHS-3 from 2005–06 to compare trends in outcomes, determinants and interventions over a decade (International Institute for Population Sciences 2008). We also used information from factsheets of the Rapid Survey on Children (RSoC 2013–14) (Ministry of Women and Child Development 2015) for indicators that are currently not available in NFHS-4 fact sheets. We used summary data reported in NFHS-4 district-level fact sheets to examine the inter-district variability.

For outcome indicators, we examined progress on a set of global nutrition targets for maternal, infant and young child nutrition (WHO 2014). These include stunting, wasting, low birth weight, exclusive breastfeeding and anemia status among women of reproductive age.

We also examined levels and changes in several immediate, underlying and basic determinants (Black et al. 2013). For intervention coverage, we chose a set of nutrition-specific interventions across the lifecycle, including interventions affecting pregnant women, newborn babies, infants, and children.

FINDINGS

Trends in nutrition outcomes and variability in outcomes by district

Overall, there have been improvements in nutrition and health outcomes in Himachal Pradesh between 2006 and 2016 (Figure 1). Stunting prevalence among children under five years declined from 38.6 percent to 26.3 percent over the decade. Low birth weight too reduced from 24.8 percent to 17.7 percent in 2016. Wasting declined from 19.3 percent to 13.7 percent and severe wasting declined from 5.5 percent to 3.9 percent over the same period. Exclusive breastfeeding (EBF) among children under six months increased remarkably by 40 percentage points from 27.2 percent to 67.2 percent. However, anemia among women of reproductive age remains a key area of concern; it increased from 43 percent in 2006 to 53.4 percent in 2016. The state performs above the national average on all the nutrition and health outcomes except on anemia among women of reproductive age.

Regarding variability within the state, stunting among children under five years of age ranges from 18.4 percent in Kinnaur to 30.3 percent in Shimla (Map 1). Anemia among women of reproductive age also varies considerably among districts, with the lowest prevalence in Hamirpur (35.8 percent) and the highest in Lahul and Spiti (83.2 percent). In nine of the 12 districts, more than 40 percent of women of reproductive age are anemic (Map 2) and in four districts, the prevalence is more than 60 percent, which is quite alarming and calls for immediate action.

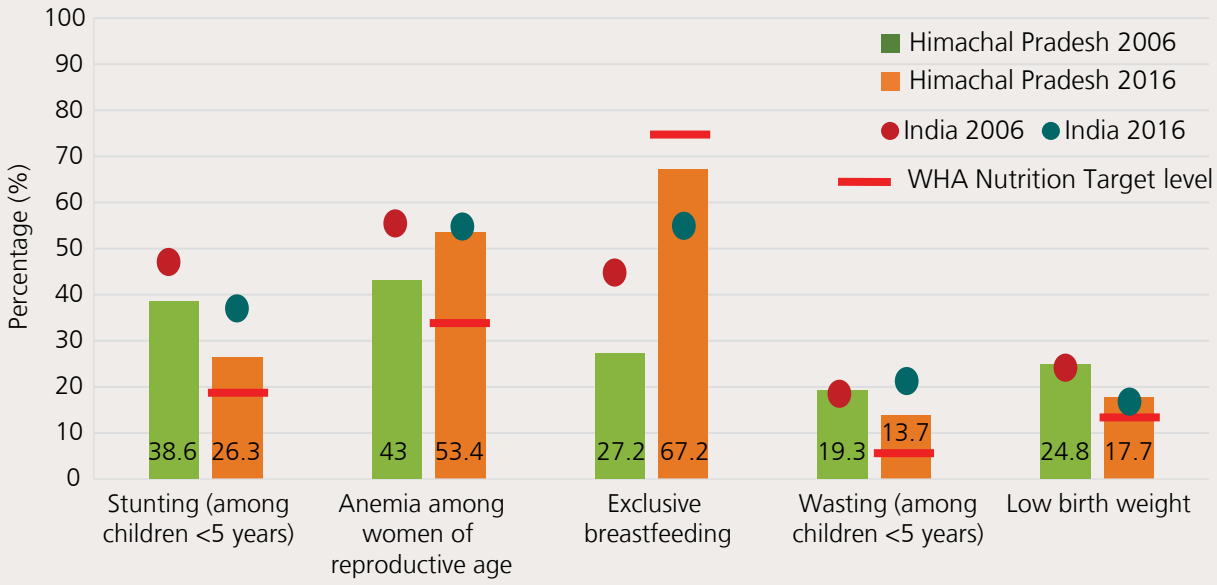
Wasting rates vary between 10.7 percent in Una district to 20.8 percent in Lahul and Spiti, and are higher than 15 percent in 5 districts, which is a public health concern. (Map 3). Lahul and Spiti also has the highest rate of severe wasting (7.3 percent), while Shimla has the lowest with 2.2 percent (Map 4).

Exclusive breastfeeding data are available for only 2 (Sirmaur – 60.4 percent and Chamba – 77.8 percent) out of 12 districts (Map 5), making it difficult to assess district-level variability.

Changes in the determinants of nutrition

Improving nutrition for women and children requires that investments be made in the determinants of nutrition, using a variety of policy instruments and other efforts. Here, we examine changes in the immediate determinants and of nutrition-specific interventions to address those determinants. We also describe changes in the underlying determinants of nutrition. We do not examine coverage data on

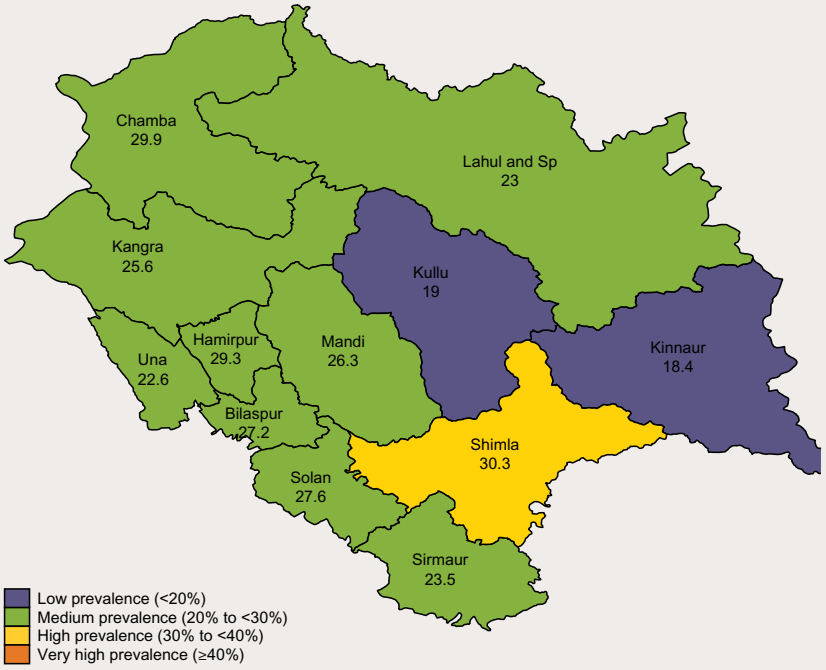
FIGURE 1 Trends in nutrition outcomes in Himachal Pradesh, 2006 to 2016



Source: NFHS-3 and NFHS-4; RSoC data used for low birth weight.

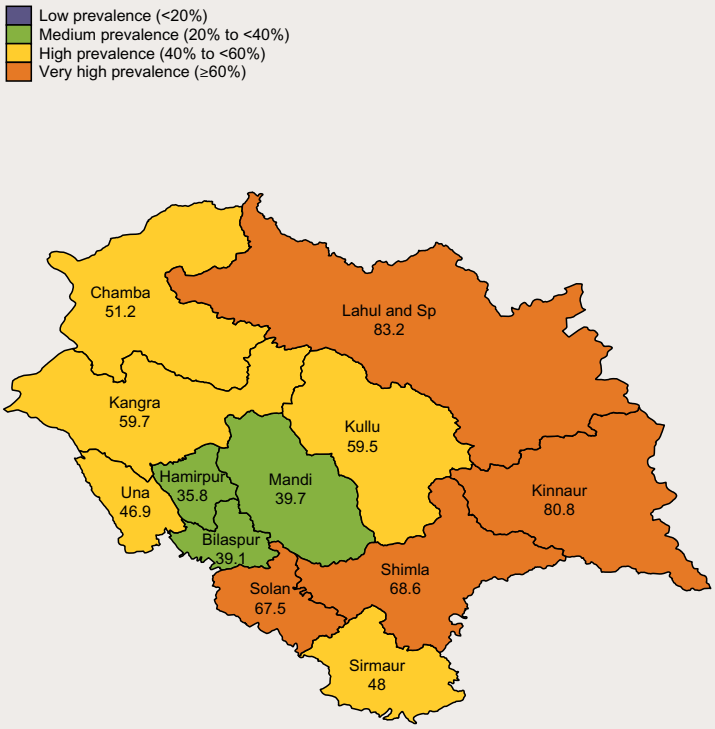
Note: A set of global nutrition targets for maternal, infant and young child nutrition were endorsed by the World Health Assembly (WHA) in 2012. The red lines represent the WHA targets to be achieved by the state, by 2025. The baseline reference year for these targets is 2012. The state baseline estimates are based on NFHS-4 (2016) as there is no survey data for 2012; Child overweight data is not available; Refer to endnotes for indicator definitions.

MAP 1 Stunting (among children <5 years) in Himachal Pradesh in 2016, by district



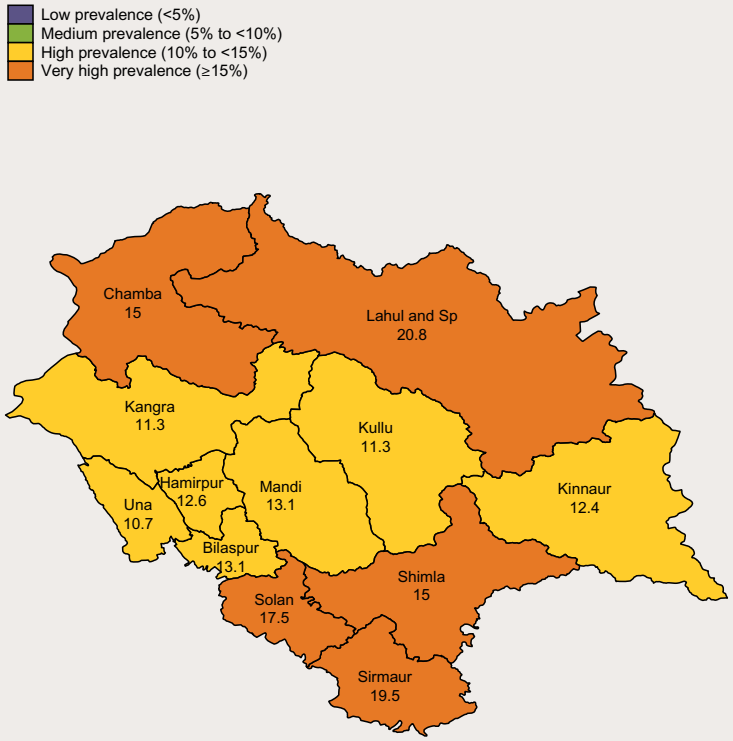
Source: NFHS-4.

MAP 2 Anemia (among women of reproductive age) in Himachal Pradesh in 2016, by district



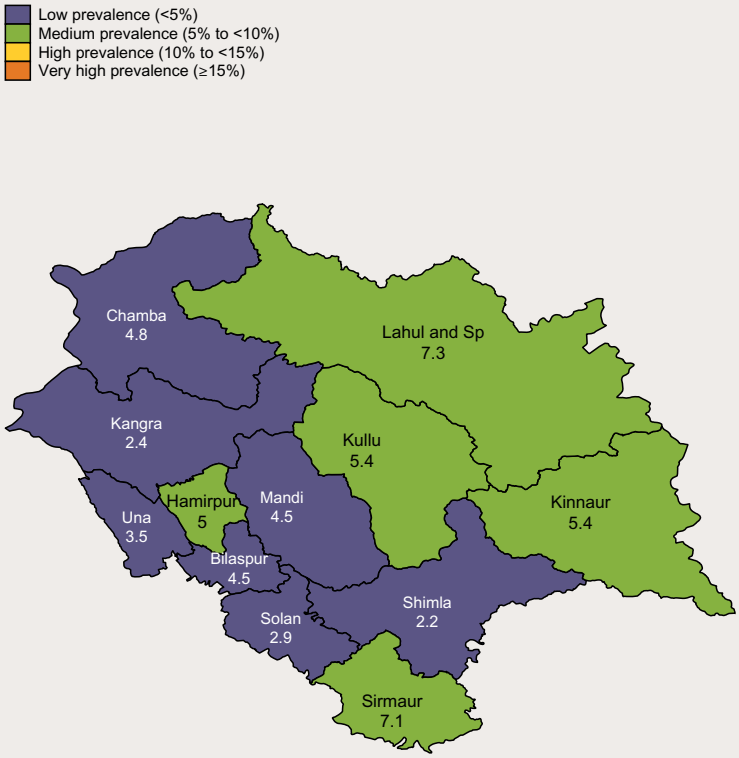
Source: NFHS-4.

MAP 3 Wasting (among children <5 years) in Himachal Pradesh in 2016, by district



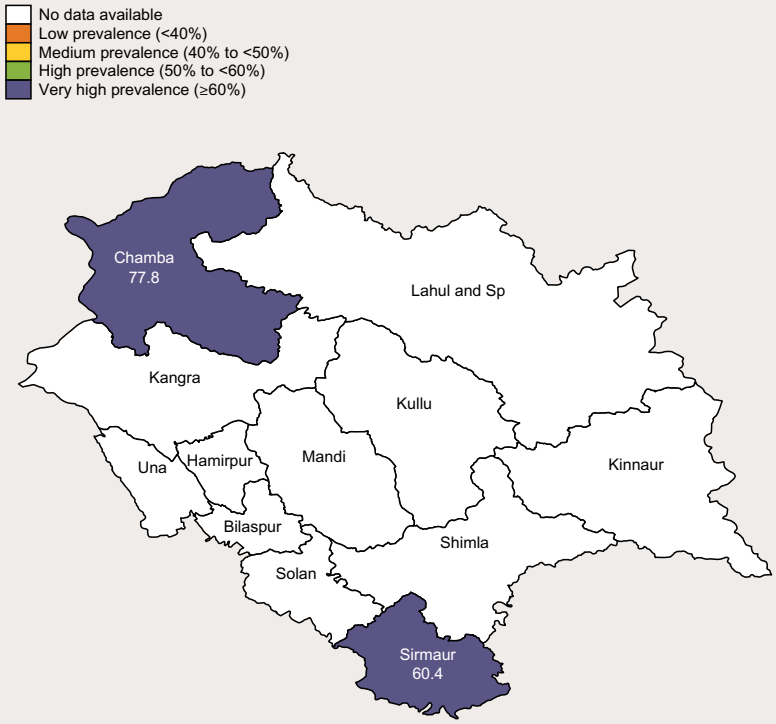
Source: NFHS-4.

MAP 4 Severe wasting (among children <5 years) in Himachal Pradesh in 2016, by district



Source: NFHS-4.

MAP 5 Exclusive breastfeeding in Himachal Pradesh in 2016, by district



Source: NFHS-4.

programs to improve the underlying determinants in this Note because data are not available at this time.

Changes in the ***immediate determinants of nutrition*** are described in Figure 2. The proportion of women with body mass index less than 18.5 kg/m^2 decreased from 29.9 percent in 2006 to 16.2 percent in 2016. However, the state has performed poorly on the indicators pertaining to infant and young child feeding (IYCF). Early initiation of breastfeeding declined from 43.4 percent in 2006 to 41.1 percent in 2016 and timely introduction of complementary foods to children between 6 to 8 months of age decreased from 61.9 percent to 52.7 percent. Only 10.9 percent of children between 6 to 23 months of age received adequate diet in 2016 in the state.

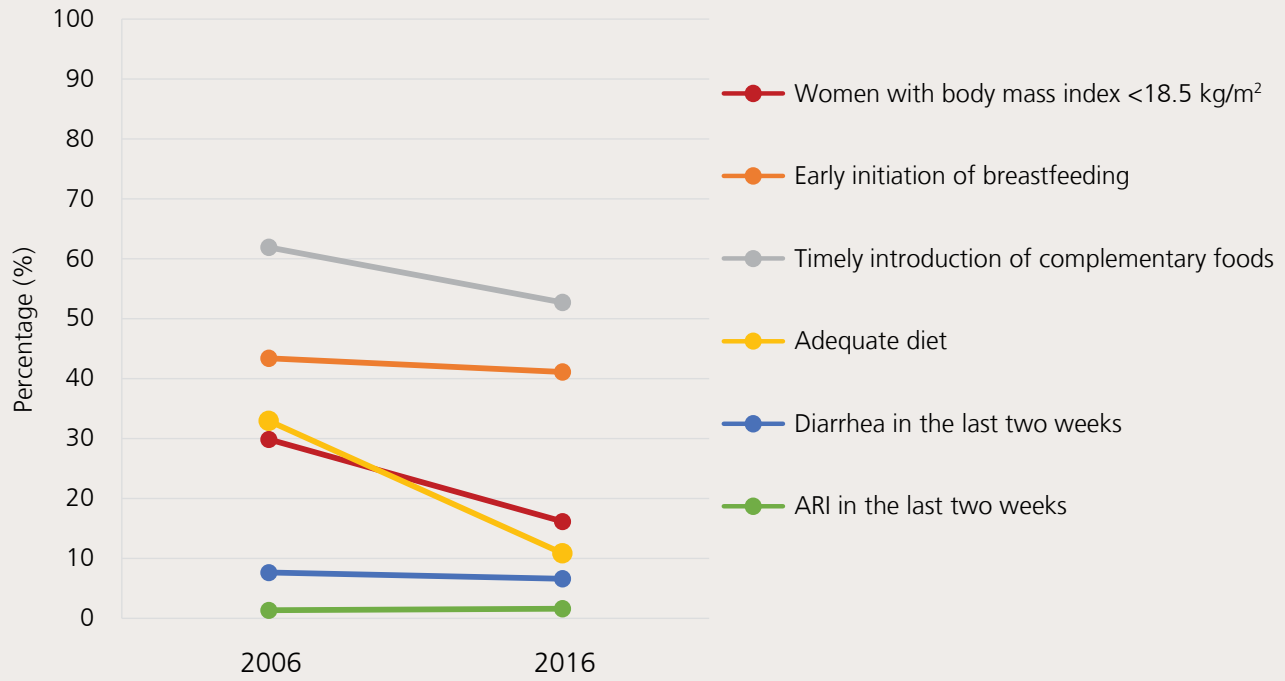
Disease burden among children in the last ten years portrays a mixed picture. Diarrhea decreased slightly from 7.7 percent to 6.6 percent while acute respiratory infection (ARI) increased from 1.4 percent to 1.6 percent.

Changes in ***nutrition-specific interventions*** in Himachal Pradesh are presented in Figure 3.

Coverage of interventions related to pregnancy has improved over the last ten years. The proportion of women who received antenatal care (ANC) during the first trimester increased from 56.8 percent to 70.5 percent. The proportion of women who received four or more ANCs increased from 44 percent to 69.1 percent. Although the proportion of women reporting consumption of iron and folic acid (IFA) supplements for 100 or more days increased from 25.2 percent to 49.4 percent, it is still far from optimal. Mothers who were immunized against tetanus during the prenatal period also increased from 72.1 percent to 86.3 percent.

Interventions related to delivery improved over the last decade. Institutional deliveries increased from 43.1 percent in 2006 to 76.4 percent in 2016, and deliveries attended by skilled birth attendants increased from 47.9 percent to 78.9 percent. Birth registration too improved from 89 percent to 95.3 percent. Coverage of most nutrition-specific interventions for children improved from 2006 to 2016. The proportion of children receiving vitamin A supplements more than doubled, from 26.7 percent to 64.3 percent. The proportion

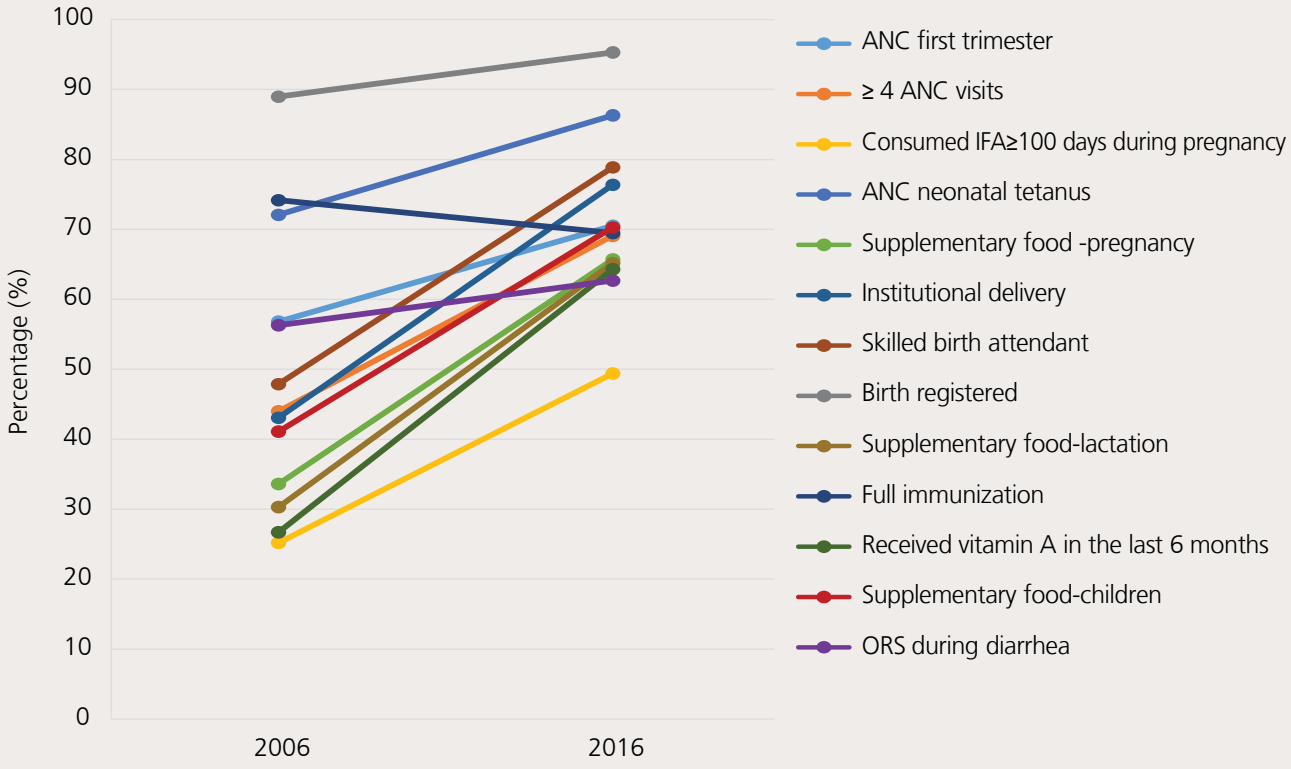
FIGURE 2 Changes in immediate determinants of nutrition in Himachal Pradesh, 2006 to 2016



Source: NFHS-3 and NFHS-4.

Note: ARI= Acute respiratory infection; Refer to endnotes for indicator definitions.

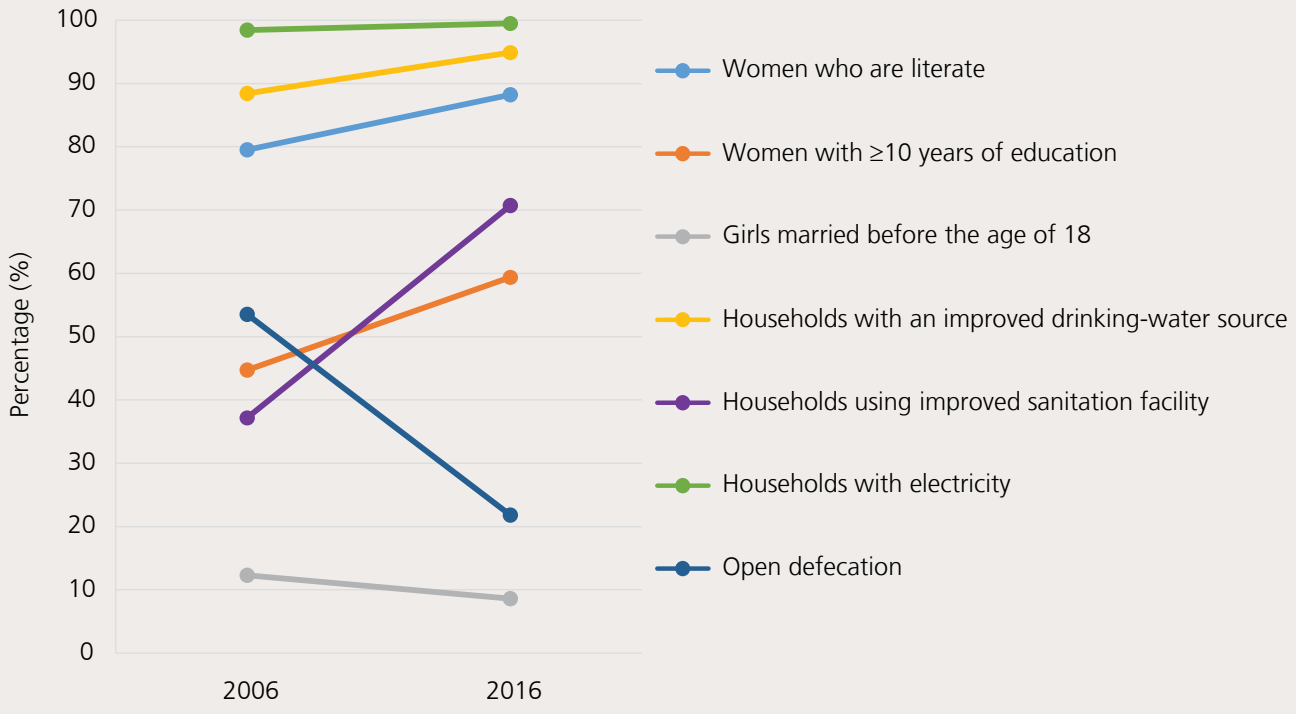
FIGURE 3 Changes in coverage of nutrition-specific interventions along the continuum of care in Himachal Pradesh, 2006 to 2016



Source: NFHS-3 and NFHS-4; RSoC data used for food supplementation.

Note: ANC= Antental care; IFA= Iron and folic acid; ORS= Oral rehydration salts; Refer to endnotes for indicator definitions.

FIGURE 4 Changes in underlying determinants of nutrition in Himachal Pradesh, 2006 to 2016



Source: NFHS-3 and NFHS-4; RSoC data used for open defecation.

Note: Refer to endnotes for indicator definitions.

of children receiving oral rehydration salts (ORS) during diarrhea improved from 56.3 percent to 62.7 percent. However, full immunization coverage declined from 74.2 percent in 2006 to 69.5 percent in 2016.

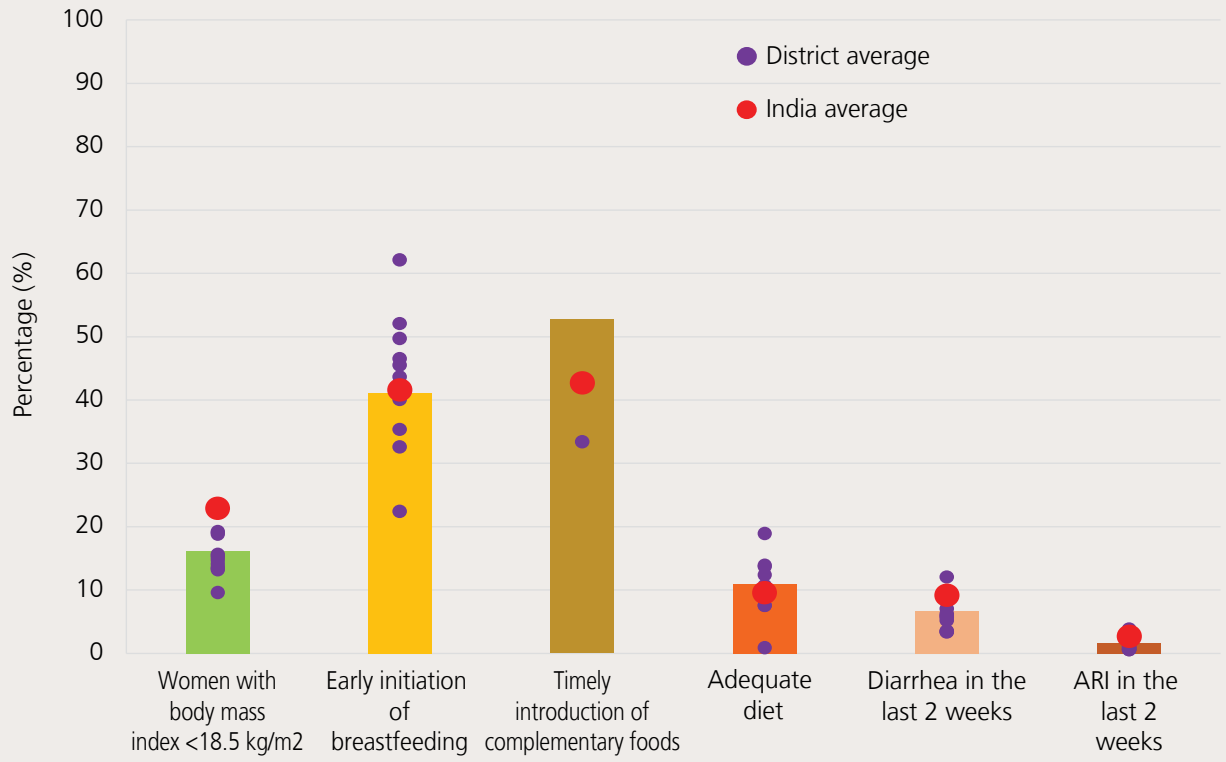
Between 2006 and 2016, the coverage of food supplements provided through the Integrated Child Development Services improved for all the beneficiary groups. The coverage of food supplements increased by 32 percentage points for pregnant women (from 33.6 percent to 65.7 percent), by 35 percentage points for lactating women (from 30.3 percent to 65.2 percent) and by 29 percentage points for children (from 41.1 percent to 70.3 percent).

In the last decade, there has been a remarkable progress in the underlying determinants of nutrition in Himachal Pradesh (Figure 4). The proportion of literate women increased from 79.5 percent in 2006 to 88.2 percent in 2016, and the proportion of women with more than ten years of education increased from 44.7 percent to 59.4 percent. Underage marriage among girls declined from 12.3 percent to 8.6 percent. More than 85 percent of the households had access to an improved drinking water source and electricity in 2006. Access to drinking water sources increased to 94.9 percent and nearly all the households had access to electricity (99.5 percent). The state has made exceptional progress in sanitation in the last decade. Households using improved sanitation, which was only 37.2 percent in 2006, increased to 70.7 percent in 2016, and was accompanied by a 31.7 percentage point decline in open defecation (from 53.5 percent to 21.8 percent).

Inter-district variability in determinants of nutrition and interventions in Himachal Pradesh, in 2016

In the figures below, we highlight the district variability in immediate determinants (Figure 5), coverage of health and nutrition interventions (Figure 6) and underlying determinants (Figure 7). Among the 12 districts of Himachal Pradesh, there is a high degree of inter-district variability for many key determinants (early initiation of breastfeeding, adequate diet, 4 or more antenatal care visits, institutional delivery, skilled birth attendant presence at birth, full immunization, household access to improved sanitation). In contrast, there is little inter-district variability for some other determinants (mother and child protection card, births registered, household access to improved drinking

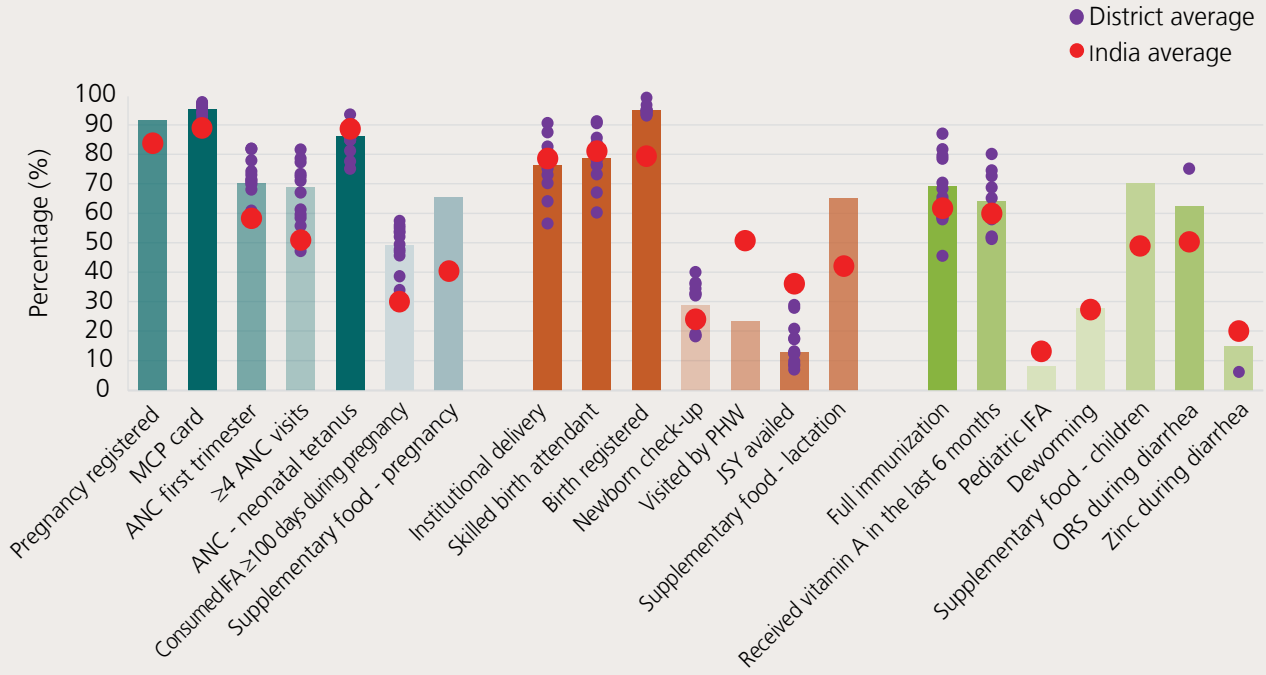
FIGURE 5 Inter-district variability in immediate determinants in Himachal Pradesh, in 2016



Source: NFHS-4.

Note: Bars represent state averages; ARI= Acute respiratory infection; Refer to endnotes for indicator definitions.

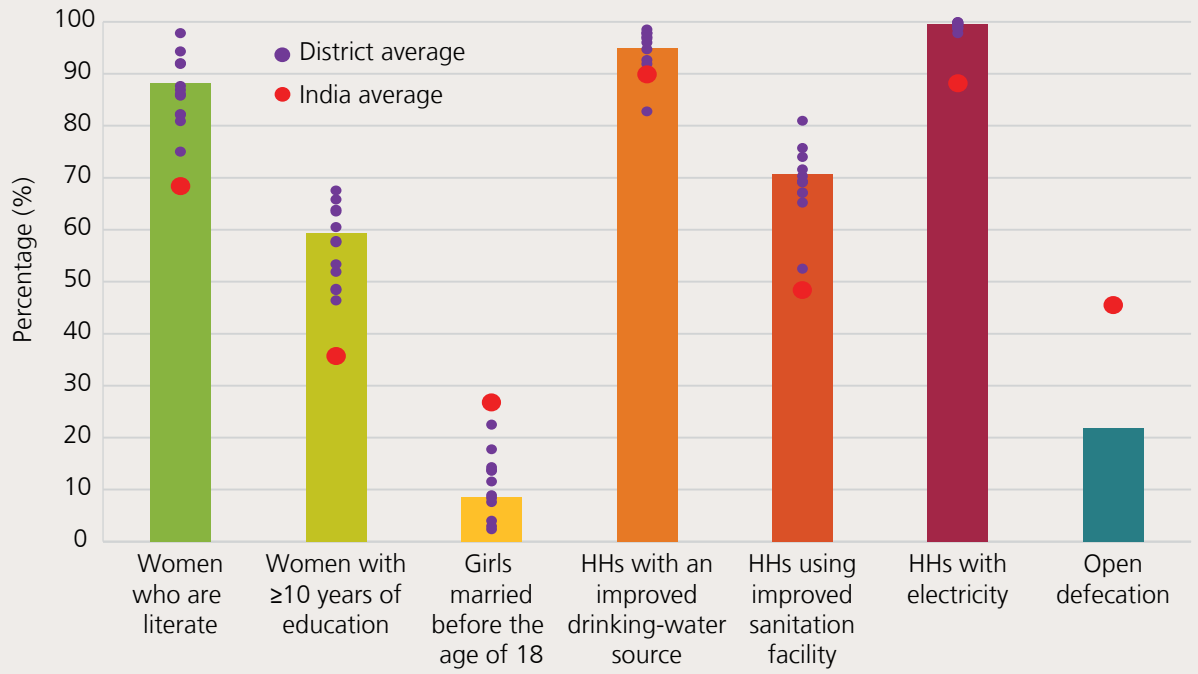
FIGURE 6 Inter-district variability in coverage of selected interventions in Himachal Pradesh, in 2016



Source: NFHS-4; RSoC data was used for indicators on pregnancy registration, food supplementation during pregnancy, lactation; and for children, visits by a health worker, pediatric IFA and deworming.

Note: Bars represent state averages; As RSoC data is not representative at the district level, district variablity is unavailable for these indicators; ANC= Antenatal care; IFA= Iron and folic acid; JSY= Janani Suraksha Yojana; ORS= Oral rehydration salts; MCP= Mother and child protection; PHW= Primary health worker; Refer to endnotes for indicator definitions.

FIGURE 7 Inter-district variability in underlying determinants in Himachal Pradesh, in 2016



Source: NFHS-4; RSoC data is used for indicator for open defecation.

Note: Bars represent state averages; HH= Household; Refer to endnotes for indicator definitions.

water and electricity) which are uniformly high across the districts.

On some indicators (like low body mass index among women, mothers given MCP card, skilled birth attendance, households with an improved drinking water source and electricity, women's literacy and education, underage marriage among girls) nearly all the districts in Himachal Pradesh are doing better than the national average. For most other indicators, districts within Himachal Pradesh are closer to the national average, except for coverage of cash transfers during pregnancy (via the Janani Suraksha Yojana program) which falls below the national average.

LOOKING FORWARD: IMPLICATIONS & RECOMMENDATIONS

In the era of India's commitment to global nutrition targets, it is an opportune time for Himachal Pradesh to set its own nutrition targets to be achieved by 2025, to examine the progress within and across the state, and to accelerate actions necessary to improve all forms of malnutrition.

The state has progressed well on several outcomes and determinants of nutrition and health. There are, however, some clear challenges ahead for the state, particularly the issue of anemia among women of reproductive age which has increased by 10.4 percentage points over the last decade (from 43 percent to 53.4 percent). Special attention is needed to identify factors contributing to anemia and to execute solutions to tackle this public health problem. Himachal Pradesh now needs to put in place a strategy that considers all forms of malnutrition captured in the WHA indicators (Figure 1).

To achieve progress on undernutrition, Himachal Pradesh should continue its investments in improving the coverage of interventions targeting the first 1000 days of life. On nutrition-specific interventions, during the prenatal phase, emphasis is needed to increase the current levels of IFA consumption and supplementary food, both of which are far from universal. It is also important to sustain the achieved progress in child birth interventions (institutional delivery and skilled birth attendance during delivery). Coverage of JSY program is very low (13 percent) and should be examined to ensure that women who need the cash benefit of this program are receiving it.

Significant efforts are needed to strengthen the coverage of several postnatal interventions, especially on reversing the declining trends in early initiation of breastfeeding, timely introduction of complementary

feeding, and full immunization. These three declining trends show that urgent focus must be placed on women in the time following child birth, to ensure that appropriate feeding and care practices are followed. Efforts must also be placed on improving the coverage of newborn check-ups, pediatric IFA, deworming, and zinc during diarrhea, in addition to supplementary food provision to pregnant and lactating women and children.

On underlying determinants, improvements seen in women's education, underage marriage and sanitation must be sustained. Most of Himachal Pradesh's districts perform better than the national average on underlying determinants, and the state should focus on maintaining its current success.

Focus on the emerging challenge of non-communicable diseases in Himachal Pradesh is required alongside investments in early nutrition. Approximately a quarter of adult men and women in the state are overweight or obese. As Figure 8 below shows, high blood pressure and high blood sugar are emerging as health challenges. Himachal Pradesh exceeds or is at par with the national averages for all these measures, highlighting the pressing need to simultaneously address undernutrition and these emerging non-communicable diseases related to nutrition.

NOTE

1. Indicator definitions, in alphabetical order:

Acute respiratory infection (ARI) in the last two weeks: Percentage of children below 5 years of age with symptoms of ARI in 15 days preceding the survey.

Adequate diet: Percentage of children 6–23 months old who received 4 or more food groups and a minimum meal frequency.

ANC (4 or more visits): Percentage of mothers receiving at least 4 ANCs for the last birth in the last 5 years.

ANC (first trimester): Percentage of mothers who received antenatal care during the first trimester of pregnancy for the last birth in the last 5 years.

ANC-neonatal tetanus injections: Percentage of mothers who were protected against neonatal tetanus for the last birth in the last 5 years.

Anemia among women of reproductive age: Percentage of women 15–49 years old who are anemic (<12.0 g/dl for non-pregnant women and <11.0 g/dl for pregnant women).

Birth registered: Percentage of children under age 5 years whose birth was registered.

Consumed IFA ≥100 days during pregnancy: Percentage of mothers who took iron and folic acid supplements for at least 100 days for the last birth in the last 5 years.

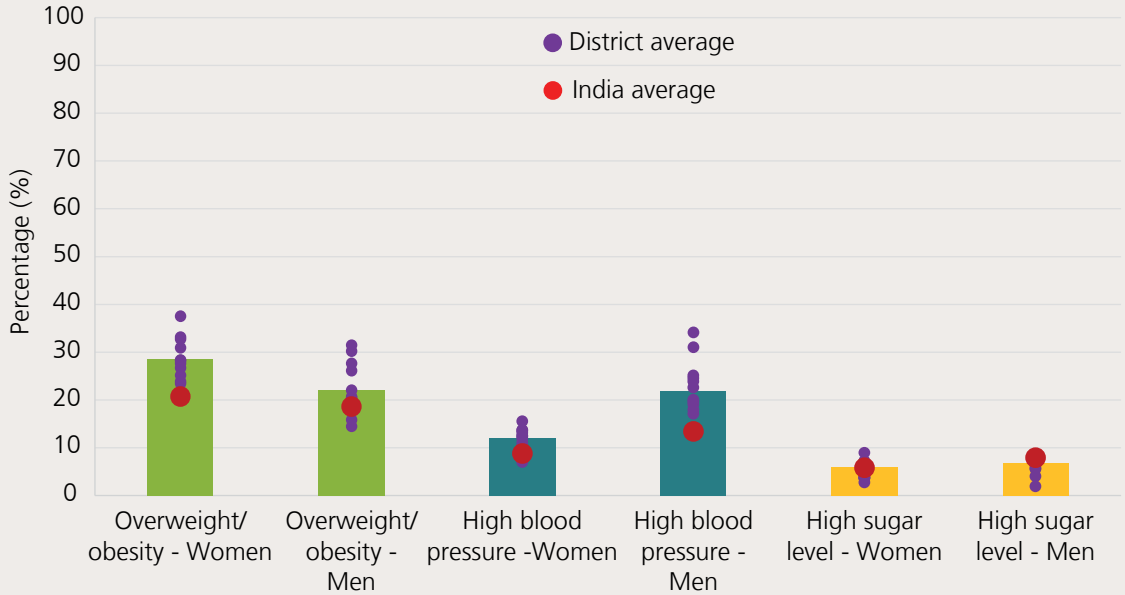
Deworming: Percentage of children 6–59 months old who were given deworming medication in the last 6 months.

Diarrhea in the last two weeks: Percentage of children below 5 years of age who had diarrhea in 15 days preceding the survey.

Early initiation of breastfeeding: Percentage of children who were breastfed within one hour of birth.

Exclusive breastfeeding: Percentage of infants 0–5 months old who were exclusively breastfed.

FIGURE 8 Levels of non-communicable diseases in Himachal Pradesh, in 2016



Source: NFHS-4.

Note: Refer to endnotes for indicator definitions.

Full immunization: Percentage of children 12–23 months old who received BCG, measles, and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth).

Girls married before the age of 18 years: Percentage of women 20–24 years old married before the age of 18 years.

High blood pressure: 15–49 year old men and women with systolic ≥140 mm of Hg and/or diastolic ≥90 mm of Hg.

High blood sugar: 15–49 year old men and women with blood sugar level >140 mg/dl.

Households with an improved drinking-water source: Percent distribution of households with an improved drinking water source.

Households with electricity: Percentage of households with electricity.

Households using improved sanitation facility: Percent distribution of households using improved sanitation facilities.

Institutional delivery: Percentage of births delivered in a health facility for births in the last 5 years.

Janani Suraksha Yojana (JSY) availed: Percentage of women who received financial assistance under JSY for births delivered in an institution for the last birth in the last 5 years.

Low birth weight: Percentage of live births in the last 5 years weighing less than 2,500 grams at birth.

Mother Child Protection (MCP) card: Percentage of registered pregnancies for which the mother received an MCP card.

Newborn check-up: Percentage of children who received a health check after birth from a doctor/nurse/LHV/ANM/midwife/ other health personnel within 2 days of birth.

Open defecation: Percentage of households having no sanitation facilities.

ORS during diarrhea: Percentage of children below 5 years of age who received ORS during diarrhea.

Overweight/obesity: 15–49 year old men and women with body mass index ≥25 kg/m^2.

Pediatric IFA: Percentage of children 6-59 months old who received iron and folic acid supplement in the last 6 months.

Pregnancy registered: Percentage of pregnancies registered among women who had a live birth in the 35 months preceding the survey.

Severe wasting: Percentage of children 0–59 months old who are<-3SD from median weight for height of the WHO Child Growth Standards.

Skilled birth attendant: Percentage of births assisted by a doctor/nurse/LHV/ANM/other health personnel.

Stunting: Percentage of children 0–59 months old who are <-2SD from median height for age of the WHO Child Growth Standards.

Supplementary food (children): Percentage of children 6–35 months old covered by an Anganwadi center (AWC) who received supplementary food provided at the AWC in the last 12 months.

Supplementary food (lactation): Percentage of mothers with children under the age of 6 years in areas covered by an AWC who received supplementary nutrition from the AWC during lactation.

Supplementary food (pregnancy): Percentage of mothers with children under the age of 6 years in areas covered by an AWC who received supplementary nutrition from the AWC during pregnancy.

Timely introduction of complementary foods: Percentage of infants 6–8 months old who received solid and semi-solid foods and breastmilk.

Visited by primary health worker (PHW): Percentage of women who were visited by a primary health worker (AWW/ ASHA/ANM) at home within one week of delivery/discharge from health institution, among those who had a live birth in 35 months preceding the survey.

Vitamin A: Percentage of children 9–59 months old who received vitamin A supplements in the last six months.

Wasting: Percentage of children 0–59 months old who are<-2SD from median weight for height of the WHO Child Growth Standards.

Women who are literate: Percentage of women who are literate.

Women with at least 10 years of education: Percentage of women 15–49 years old having at least 10 years of schooling.

Women with body mass index (BMI)<18.5kg/m^2: Percentage of women 15–49 years old with BMI less than 18.5 kg/m^2.

Zinc during diarrhea: Percentage of children below 5 years of age who received zinc during diarrhea.

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Centre for Equity Studies

WRITTEN BY

Nitya R. George, Senior Research Assistant, IFPRI

Phuong Hong Nguyen, Research Fellow, IFPRI

Rasmi Avula, Research Fellow, IFPRI

Purnima Menon, Senior Research Fellow, IFPRI

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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 build evidence on effective actions for nutrition and support the use of evidence in decision-making. It is supported by the Bill & Melinda Gates Foundation and led by IFPRI in India.

ABOUT POLICY NOTES

POSHAN Policy Notes aim to provide evidence-based guidance to support policy and program actions for nutrition in India.

CONTACT US

Email us at IFPRI-POSHAN@cgiar.org

IFPRI-NEW DELHI

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

NASC Complex, CG Block,
Dev Prakash Shastri Road,
Pusa, New Delhi 110012, India
T +91.11.66166565
F +91.11.66781699

IFPRI-HEADQUARTERS

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

2033 K Street, NW,
Washington, DC 20006-1002 USA
T. +1.202.862.5600
F. +1.202.467.4439
Skype: IFPRIhomeoffice
ifpri@cgiar.org
www.ifpri.org

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