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

Policy Note

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Improving Nutrition in Andhra Pradesh

Insights from the Current Status of Outcomes, Determinants and Interventions in 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 variability in state-level changes in the determinants of nutrition and in the coverage of health and nutrition interventions. Although all of 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 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 Andhra Pradesh.

Andhra Pradesh, situated in the southern belt of India, has an area of about 1.6 million squared kilometers and a population of approximately 49.67 million (Andhra Pradesh Government 2017). In March 2014, the former state of Andhra Pradesh was bifurcated into the current state of Andhra Pradesh and Telangana. Prior to 2014, Andhra Pradesh consisted of 23 districts. After bifurcation, it has retained 13 districts.

The purpose of this *Policy Note* is to examine the current status of undernutrition in Andhra Pradesh and to document 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 key areas of action to improve nutrition in Andhra Pradesh.

METHODS

We used summary data from the recently released National Family Health Survey-4 (NFHS-4 2015–16) state and district fact sheets (International Institute for Population Science 2017), to understand the current status of outcomes, determinants and interventions as well as to examine the inter district variability (International Institute for Population Sciences 2008).

For outcome indicators, we examined the current levels for a set of nutrition targets for maternal, infant and young child nutrition. These include stunting, wasting, exclusive breastfeeding, and anemia status among women of reproductive age.

We also examined levels of 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.

We do not analyze changes over time for outcomes, determinants and interventions in this Policy Note because unit level data are not available at this time. The NFHS-4 summary data is not comparable to NFHS-3 and Rapid Survey on Children (RSoC) data due to modifications to the geographical boundaries of Andhra Pradesh.

FINDINGS

Current status of nutrition outcomes and variability in outcomes by district

In Andhra Pradesh, among children under five years, nearly 30 percent of the children are stunted,

17 percent are wasted and 4.5 percent are severely wasted (Figure 1). While Andhra Pradesh performs better than the national average, the nutritional status of children needs to improve. Anemia among women of reproductive age is a serious public health concern with 60 percent of women being anemic, which is higher than the national average. The high level of exclusive breastfeeding (EBF) for children under six months, which is at 70.2 percent, is an encouraging sign.

Stunting among children under five years varies across districts, ranging from 22.1 to 44.1 percent (Map 1). Districts in the western region of Andhra Pradesh have levels of stunting higher than 40 percent (rated as very high) – Anantapur is at 40.3 percent and Kurnool at 44.1 percent. Districts in the central region (Guntur, Krishna, West Godavari, East Godavari, Prakasam and Sri Potti Sriramulu Nellore) have medium levels of stunting, with Guntur district having the lowest stunting levels in Andhra Pradesh (22.1 percent).

The prevalence of anemia among women of reproductive age is higher than 48 percent in all the districts of Andhra Pradesh and higher than 60 percent in four of the northern districts (Map 2). The highest prevalence of anemia among women is in Vizianagaram (75.5 percent) and the lowest prevalence is in Chittoor (48.8 percent).

Every district in Andhra Pradesh, except West Godavari (14.7 percent), has wasting levels higher than 15 percent (Map 3). Krishna district has the highest prevalence of wasting (20.7 percent). It is important to note that while Guntur has the lowest prevalence of stunting (22.1 percent), it has the highest prevalence of severe wasting (9.8 percent) (Map 4). Vishakapatnam has the lowest prevalence of severe wasting (1.5 percent).

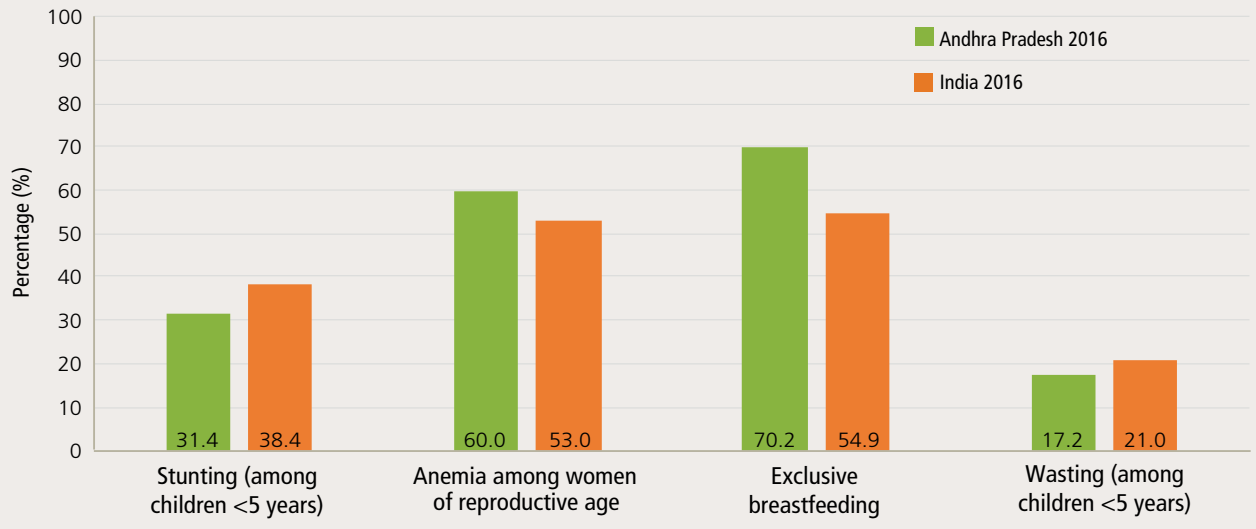
The summary data on EBF is available only for four districts (Vizianagaram, Sri Potti Sriramulu Nellore, Y.S.R. (Cuddapah) and Kurnool) making it difficult to assess inter-district variability for the entire state (Map 5). The prevalence of EBF is nearly 90 percent in Kurnool.

Status of the determinants of nutrition, 2016

Improving nutrition for women and children requires that investments be made in changing the determinants of poor nutrition, using a variety of policy instruments. Here, we examine the current status of immediate and underlying determinants and that of nutrition-specific interventions. We do not examine coverage data on programs to improve the underlying determinants in this note because data are not available at this time.

Among ***immediate determinants of nutrition*** (Figure 2), Andhra Pradesh performs better than

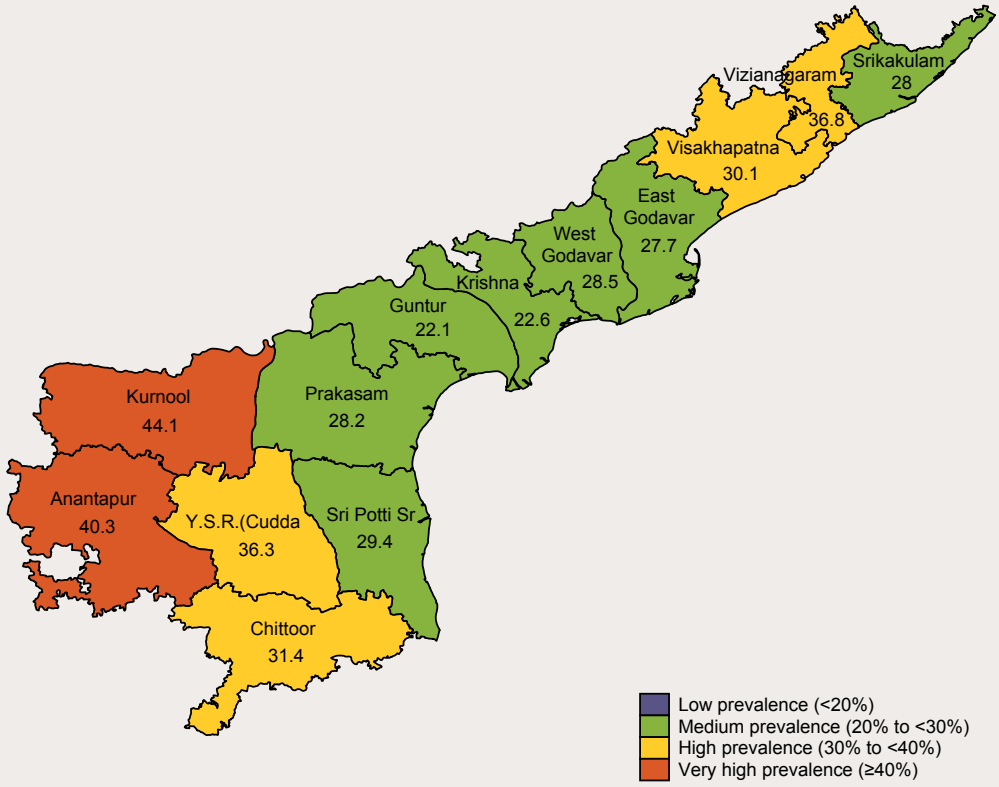
FIGURE 1 Current status of nutrition outcomes in Andhra Pradesh and India, 2016



Source: NFHS-4.

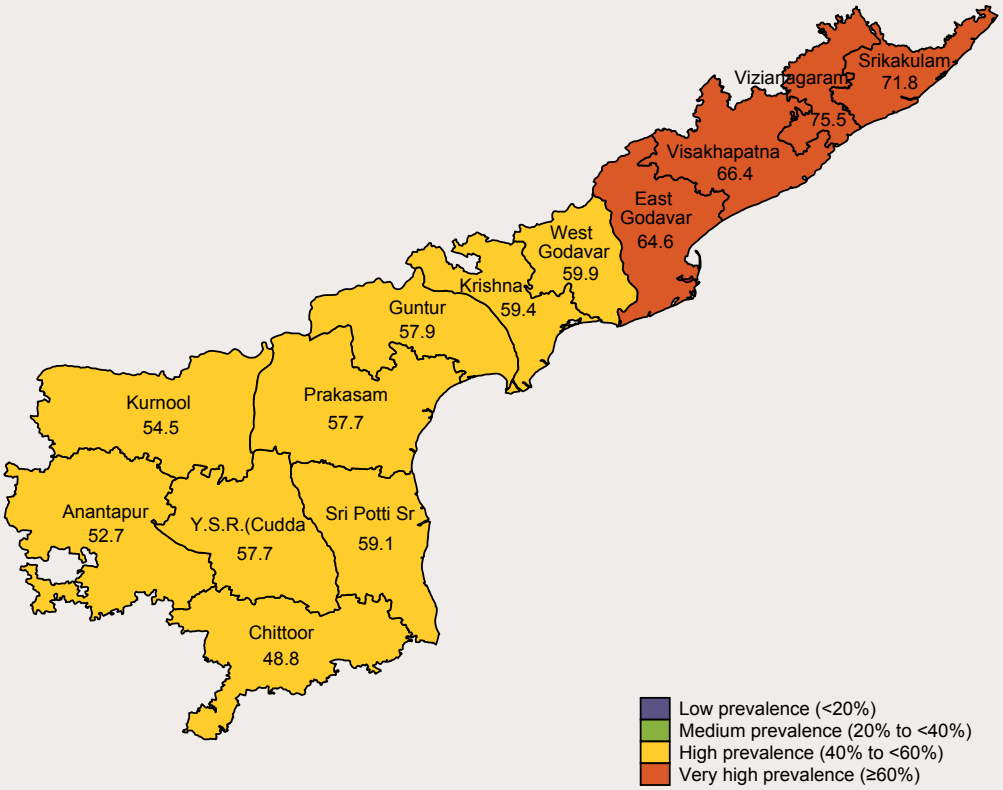
Note: Child overweight and low birth weight data is not available; Refer to endnotes for indicator definitions.

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



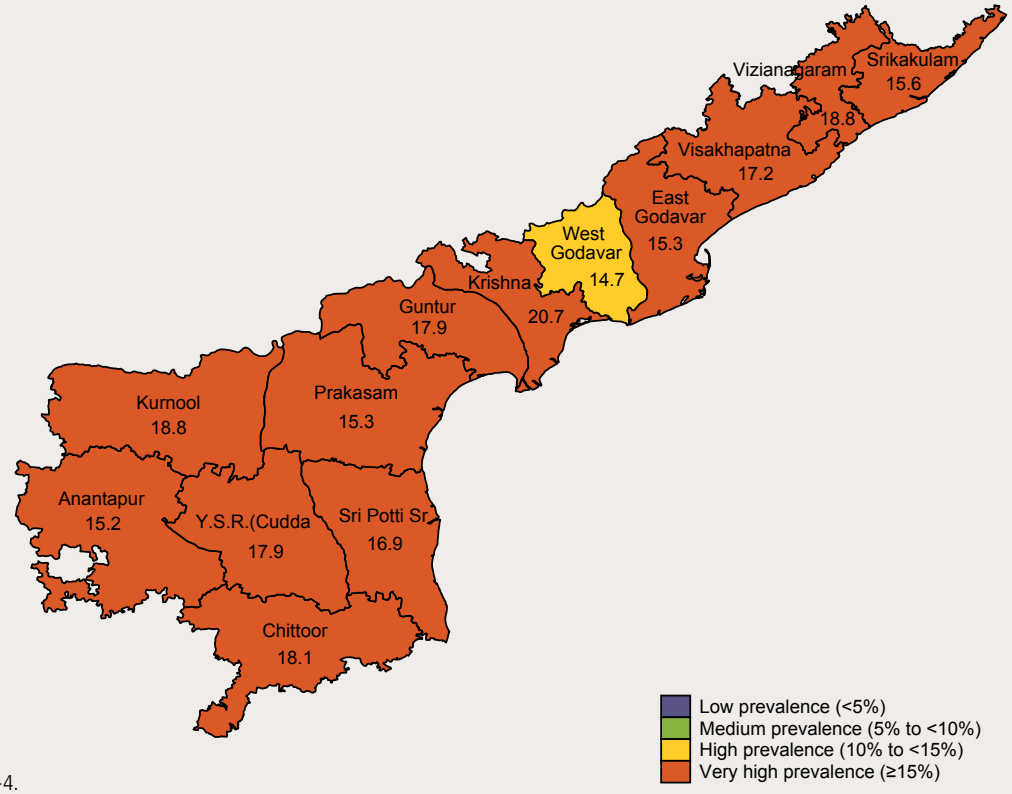
Source: NFHS-4.

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



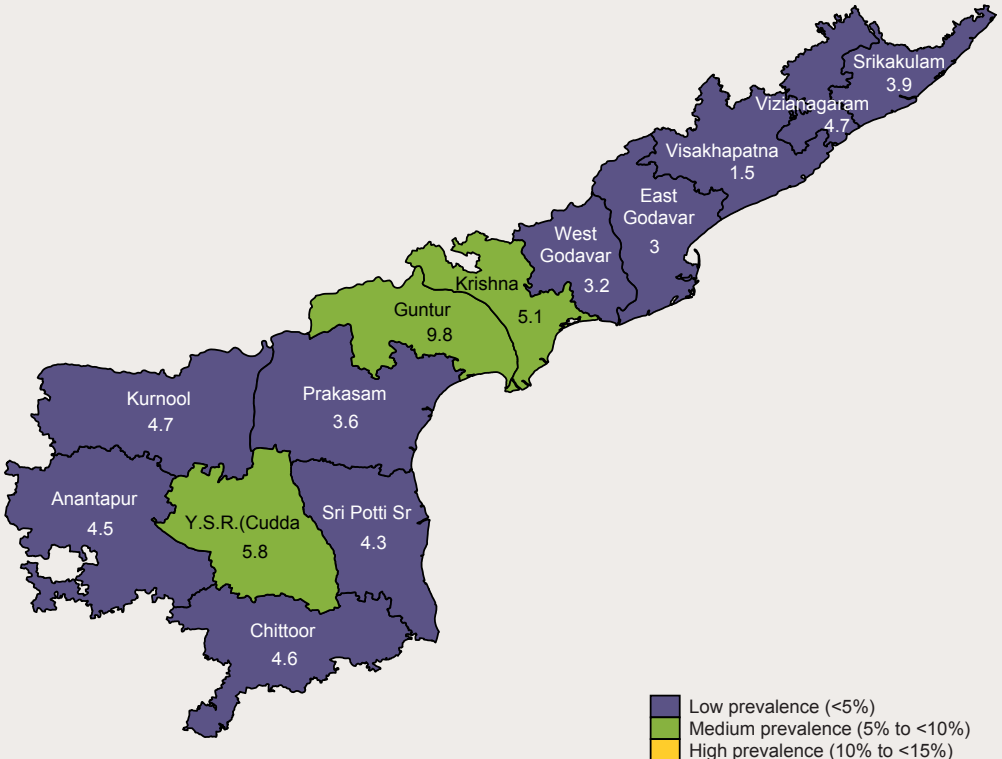
Source: NFHS-4.

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



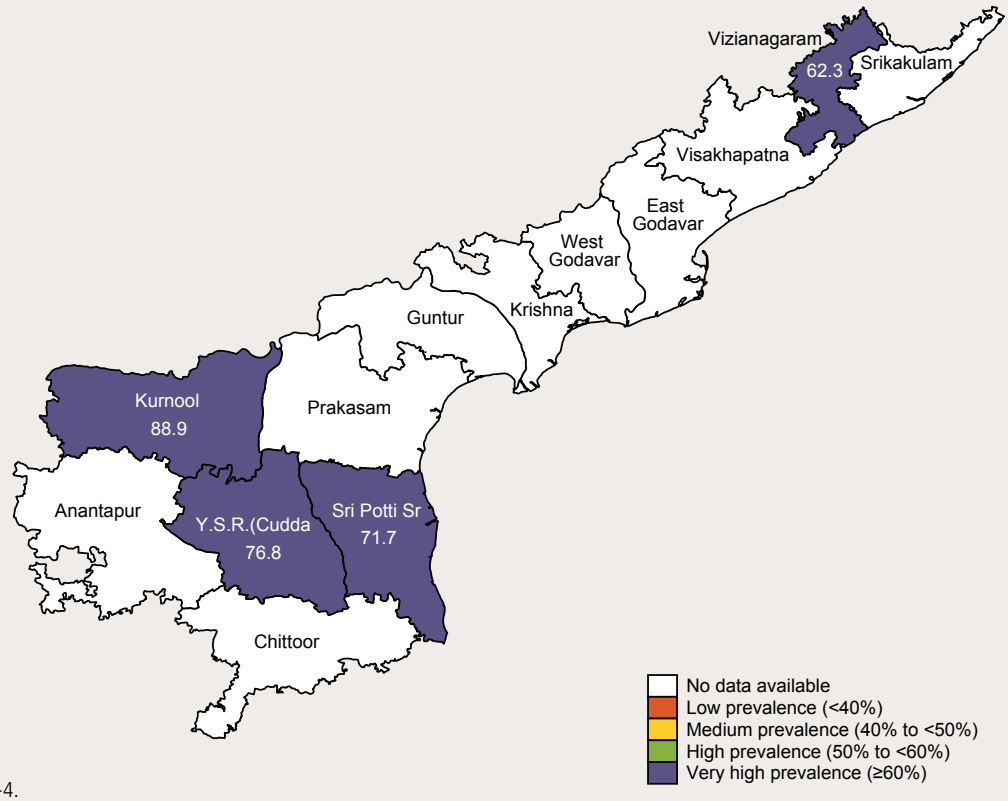
Source: NFHS-4.

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



Source: NFHS-4.

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



Source: NFHS-4.

the national average except for early initiation of breastfeeding and adequate diet. Early initiation of breastfeeding is low with only 40 percent of children being breastfed within the first one hour of birth. Only 7.6 percent of children (between 6 and 23 months of age) receive an adequate diet and 56 percent of children (between 6 and 8 months of age) are introduced to complementary foods at the right time.

The disease burden of the state is lower than the national average. The prevalence of diarrhea is only 6.6 percent and less than 1 percent of children suffer from Acute Respiratory Infection (ARI).

Coverage of all ***nutrition specific interventions*** in the state (except for availing cash transfers through the Janani Suraksha Yojana (JSY) and use of oral rehydration salts (ORS) during diarrhea) is higher than the national average (Figure 3). The coverage of most interventions related to pregnancy is high. The proportion of women who received antenatal care (ANC) in the first trimester is 82.4 percent, and those who had four or more ANC visits is 76.3 percent. Nearly, all pregnant women received neonatal tetanus vaccination. However, the proportion of women who consumed iron and folic acid (IFA) tablets for 100 or more days is only 56.2 percent. The coverage is more than 90 percent for interventions related to delivery, such as the proportion of women who delivered in health facilities (91.6 percent) and were assisted by skilled birth attendants (92.2 percent).

Coverage of most nutrition focused interventions for children in Andhra Pradesh portrays a mixed picture. On a positive note, vitamin A supplementation is at 72.1 percent. However, full immunization levels are low, with only 65.3 percent of children being fully immunized. Less than half of the children consumed ORS and less than a third received zinc supplementation during diarrhea.

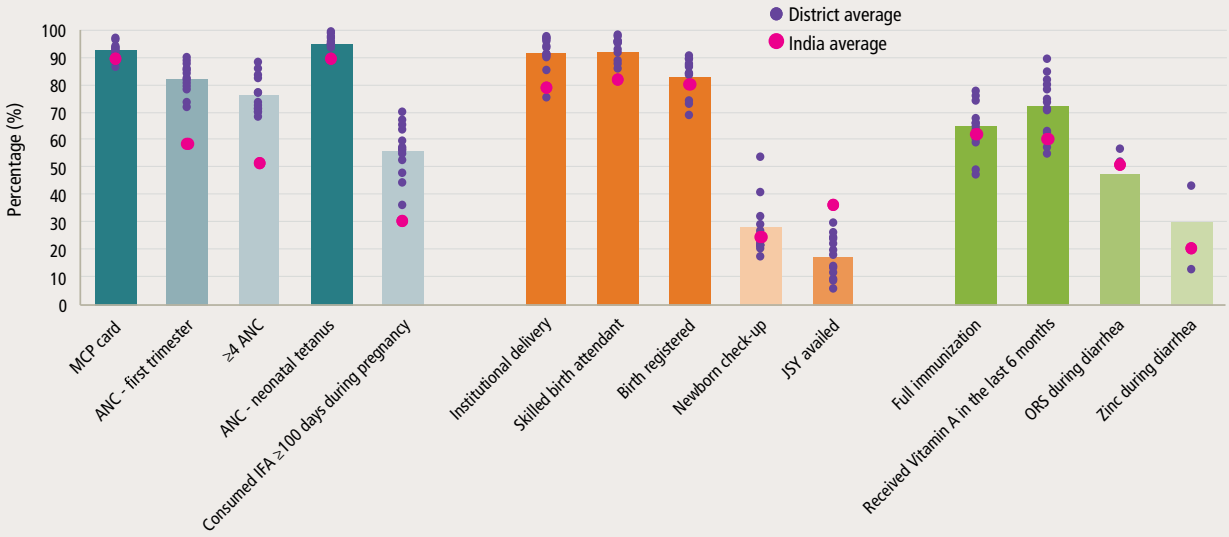
The state has a mixed performance for the ***underlying determinants of nutrition*** (Figure 4). Almost all the households have electricity (98.8 percent) and 62.9 percent of women in the state are literate. Although closer to the national average, only a third of the women have 10 or more years of education. Furthermore, a third of the girls are married before the age of 18, which is higher than the national average. Nearly half of the households do not use improved sanitation facilities in the state and a

FIGURE 2 Inter-district variability in immediate determinants in Andhra Pradesh, in 2016

Source: NFHS-4.

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

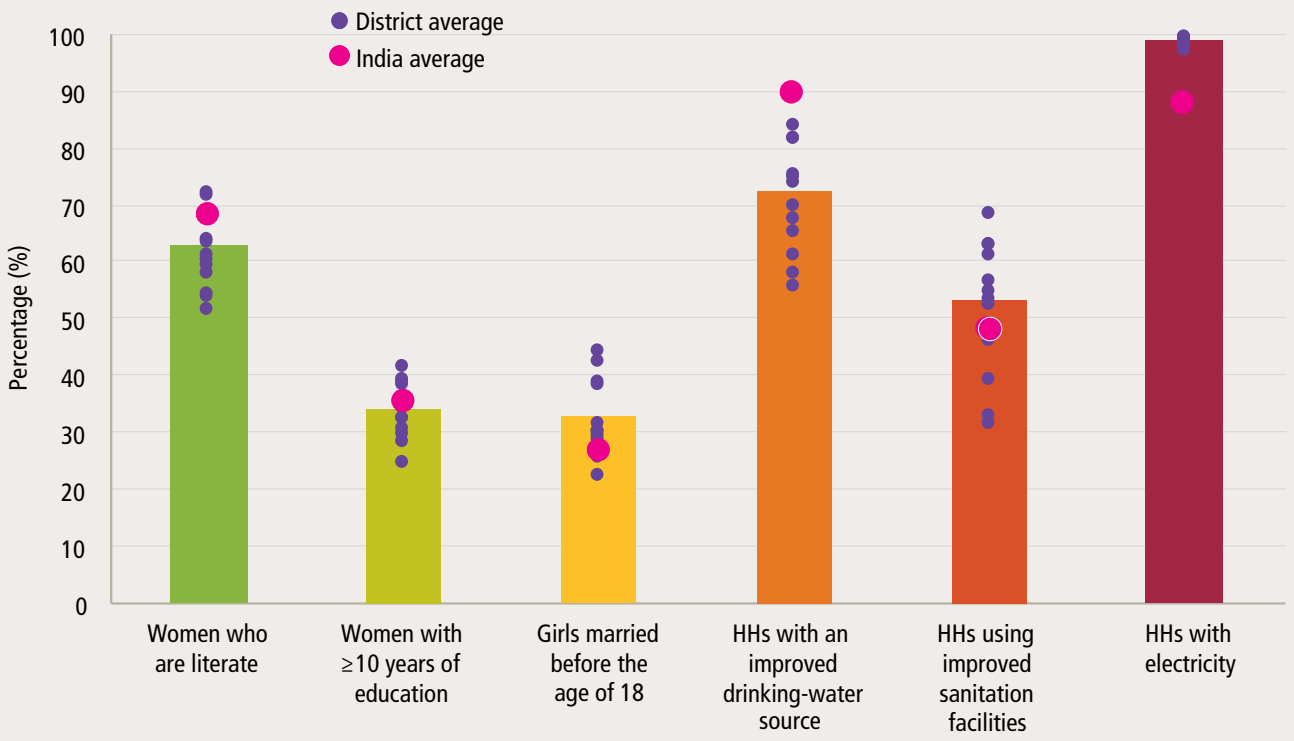
FIGURE 3 Inter-district variability in selected coverage of interventions in Andhra Pradesh, in 2016



Source: NFHS-4

Note: Bars represent the state averages; ANC= Antenatal care; IFA= Iron and folic acid; JSY= Janani Suraksha Yojana; ORS= Oral rehydration salts; MCP= Mother and child protection; Refer to endnotes for indicator definitions.

FIGURE 4 Inter-district variability in underlying determinants in Andhra Pradesh, in 2016



Source: NFHS-4.

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

quarter of the households still do not have a source of improved drinking water.

The inter-district variability in immediate determinants, coverage of health and nutrition interventions and underlying determinants is highlighted in Figures 2–4. Among the 13 districts in Andhra Pradesh, high inter-district variation is seen for many key determinants of nutrition (early initiation of breastfeeding, ANC during first trimester, 4 or more ANCs, IFA during pregnancy, institutional delivery, birth registration, skilled birth attendance, newborn check-up, cash transfers availed (JSY), full immunization, vitamin A supplementation, girls married before the age of 18, households with an improved drinking water source and households using improved sanitation facilities). In contrast, there is little inter-district variability for some other determinants (women with body mass index <18 kg/m^2, diarrhea, ARI, neonatal tetanus and households with access to electricity). There are also clear outlier districts for some health interventions (newborn check-up and early initiation of breast-feeding). For example, in East Godavari, 53.7 percent of newborn infants had a health check-up, which is followed by Vishakapatnam at 41.1 percent, while the state average is 28.5 percent.

For some determinants of nutrition such as adequate diet, diarrhea in the last two weeks, ARI in the last two weeks, cash transfers availed (through JSY), literate women and households with an improved drinking water source, almost all the districts in Andhra Pradesh fall around or below the national average. For other indicators like ANC in the first trimester, four or more ANCs, institutional delivery, consumption of IFA during pregnancy, skilled birth attendant and households with electricity, almost all the districts are above the national average.

LOOKING FORWARD: IMPLICATIONS & RECOMMENDATIONS

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

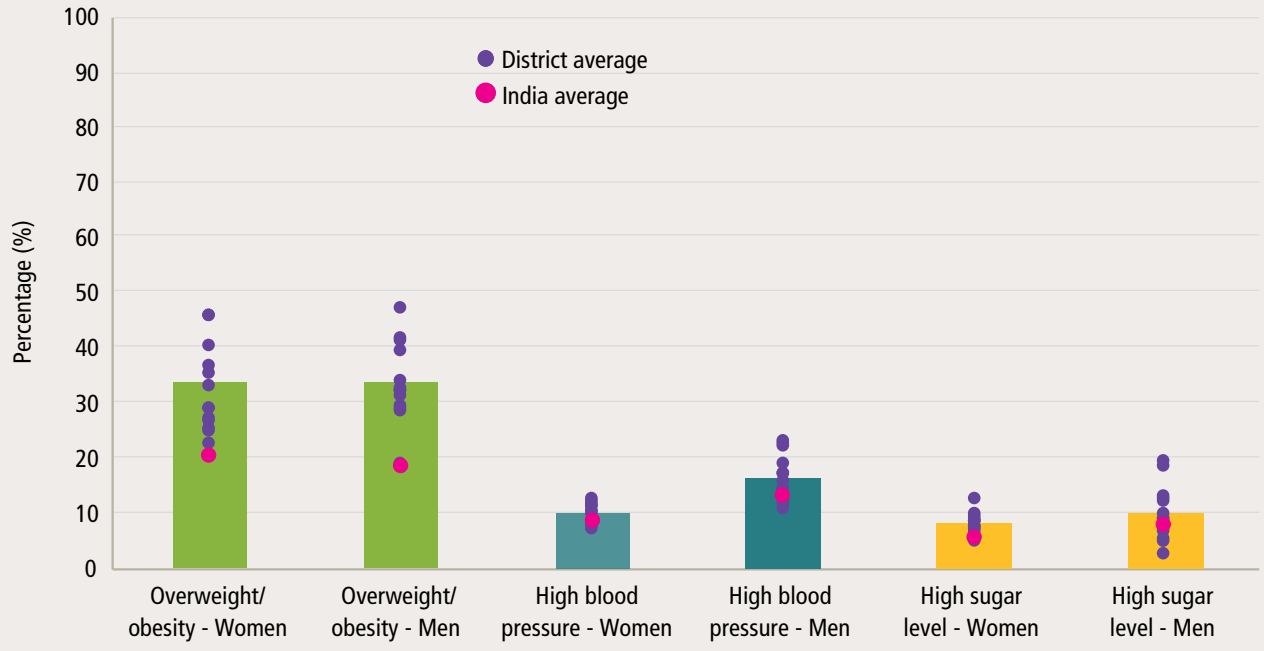
levels of anemia are a public health concern. It is important to identify factors contributing to the high levels of anemia among women of reproductive age and to introduce solutions. Special attention is also required to address the prevalence of wasting, which is more than 15 percent in most districts.

To achieve progress on undernutrition, Andhra Pradesh should continue 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, which are far from universal. Efforts to sustain the almost universal coverage of institutional delivery and skilled birth attendance is important. The proportion of women availing benefits from JSY is extremely low despite a very high institutional delivery rate, which calls for examining the reasons for low utilization.

The performance of Andhra Pradesh on interventions related to the post-natal period needs to be addressed with a special focus on improving the coverage of newborn check-ups, full immunization and use of ORS and zinc during diarrhea. Promotion of timely and appropriate complementary feeding practices for children are recommended as the performance on related indicators is very poor. On underlying determinants, women's education, early age of marriage, drinking water and sanitation requires immediate attention. Lessons can be learnt from the districts which are performing exceptionally well in certain indicators and additional efforts need to be focused on helping districts which are lagging behind.

The challenge of non-communicable diseases is pervasive across Andhra Pradesh (Figure 5). The current rate of overweight and obesity in Andhra Pradesh is alarming with one in three men and women in Andhra Pradesh being overweight or obese, which is higher than the national average. The prevalence of high blood pressure among men is 10 percent and among women is 16.2 percent. High blood sugar levels among men and women are 9.8 percent and 8.2 percent, respectively. The high prevalence of overweight and obesity needs to be tackled along with complementary mechanisms to address the challenges of high blood pressure and high blood sugar levels. Andhra Pradesh now needs to develop a strong nutrition strategy to simultaneously address undernutrition and these emerging non-communicable diseases related to nutrition.

FIGURE 5 Levels of non-communicable diseases in Andhra Pradesh, in 2016



Source: NFHS-4.

Note: Bars represent the state averages; Refer to endnotes for indicator definitions.

NOTES

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 ANC 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 the age of 5 years whose birth was registered.

Consumed IFA ≥ 100 days during pregnancy: Percentage of mothers who took IFA 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.

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 years old men and women with systolic ≥140 mm of Hg and/or diastolic ≥90 mm of Hg.

High blood sugar: 15–49 years 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 household having no sanitation facilities.

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

Overweight/obesity: 15–49 years 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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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.

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