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Status of Child Nutrition and Community Nutrition Support Systems

Indore, India

BUILDING HEALTHY CITIES

February 2022

THRIVE NETWORKS

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URBAN INSTITUTE

Contents

Acronyms

ANM	auxiliary nurse midwife
ASHA	accredited social health activist
AWC	Anganwadi center
AWW	Anganwadi worker
BHC	Building Healthy Cities Project
ICDS	Integrated Child Development Services
IEC	information, education and communication
MAM	moderate acute malnutrition
MUAC	mid-upper arm circumference
RUSF	ready-to-use supplementary food
RUTF	ready-to-use therapeutic food
SAM	severe acute malnutrition

Building Healthy Cities

Building Healthy Cities is a five-year cooperative agreement funded by the United States Agency for International Development (USAID) under Agreement No. AID-OAA-A-17-00028, beginning September 30, 2017. Building Healthy Cities is implemented by JSI Research & Training Institute, Inc. (JSI) with partners International Organization for Migration, Thrive Networks Global, and Urban Institute, and with support from Engaging Inquiry, LLC. This brief is made possible by the generous support of the American people through USAID. The contents are the responsibility of Building Healthy Cities and do not necessarily reflect the views of USAID or the United States Government.

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For More Information

Please visit the BHC webpage at www.jsi.com/buildinghealthycities to explore additional project resources.

Cover Image

Credit: Damodar Bachani, John Snow India Pvt Ltd, 2018.

About the Building Healthy Cities Project

The **Building Healthy Cities (BHC) project** is supporting the city of Indore to engage with local urban systems that contribute to the health of its citizens. Equitable access to nutritious food, health facilities, and social protection schemes are important parts of both nutrition and healthy urban planning.

BHC, funded by the United States Agency for International Development, works with Smart Cities in four countries: Indore in India, Makassar in Indonesia, Da Nang in Vietnam, and Kathmandu in Nepal. BHC engages with sectors that contribute, directly or indirectly, to citizens' health (particularly women's and children's health) and quality of life. This multisector engagement, the first core value of BHC, aims to provide all municipal sectors a common understanding of how they contribute to health.

The second BHC core value is to strengthen community engagement in municipal decision-making. Specifically, BHC is dedicated to building community awareness and capacity to convince decision-makers to improve the quality of and access to services and information. BHC's third core value is supporting use of data for planning and decision-making. Informed by these three core values, the project is working to improve healthy urban planning.

How to Use This Information

In order to bring the BHC core values to life and make practical system-wide changes, we suggest Indore stakeholders use this information to:

Coordinate with other sectors who have responsibility for and control over the parts of the nutrition support system identified in this document to make a plan for quality improvement.

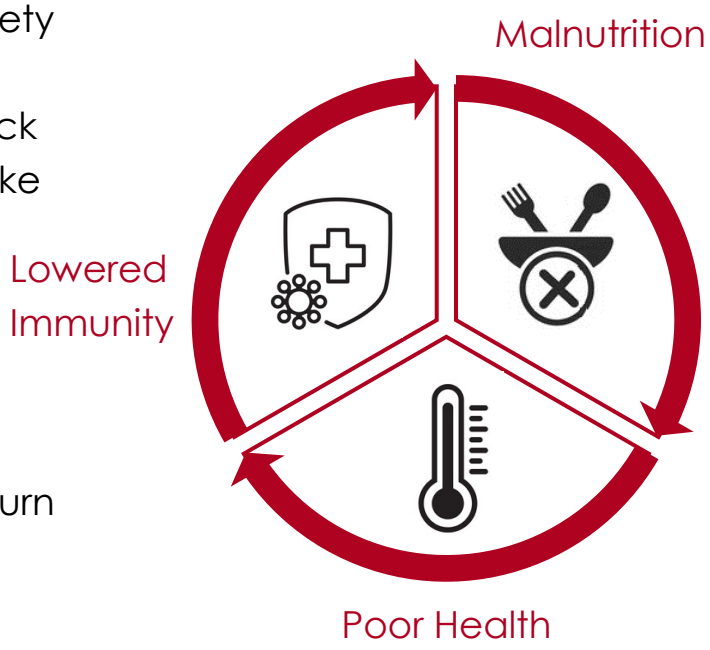
Use these data to drive decisions about where in the nutrition system to invest yearly funds.

Create and support regular citizen feedback mechanisms for nutrition to get regular updates on what is and is not working regarding nutrition service provision as changes are made, and adjust strategies accordingly.

Why Should Cities Care About Child Malnutrition?

Child malnutrition has consequences for the individual and society at large. Malnutrition affects growth and both cognitive and physical development. **Health and nutrition are also inextricably linked**; poor health puts children at greater risk of becoming malnourished and malnourished children are at greater risk of becoming ill.[1] While it has long been thought that children in cities receive an "urban advantage," a recent systematic review found that urban poverty poses unique barriers to accessing nutritious, secure, and healthy diets that drive a reliable association with poorer nutrition outcomes in lower income urban children.[2]

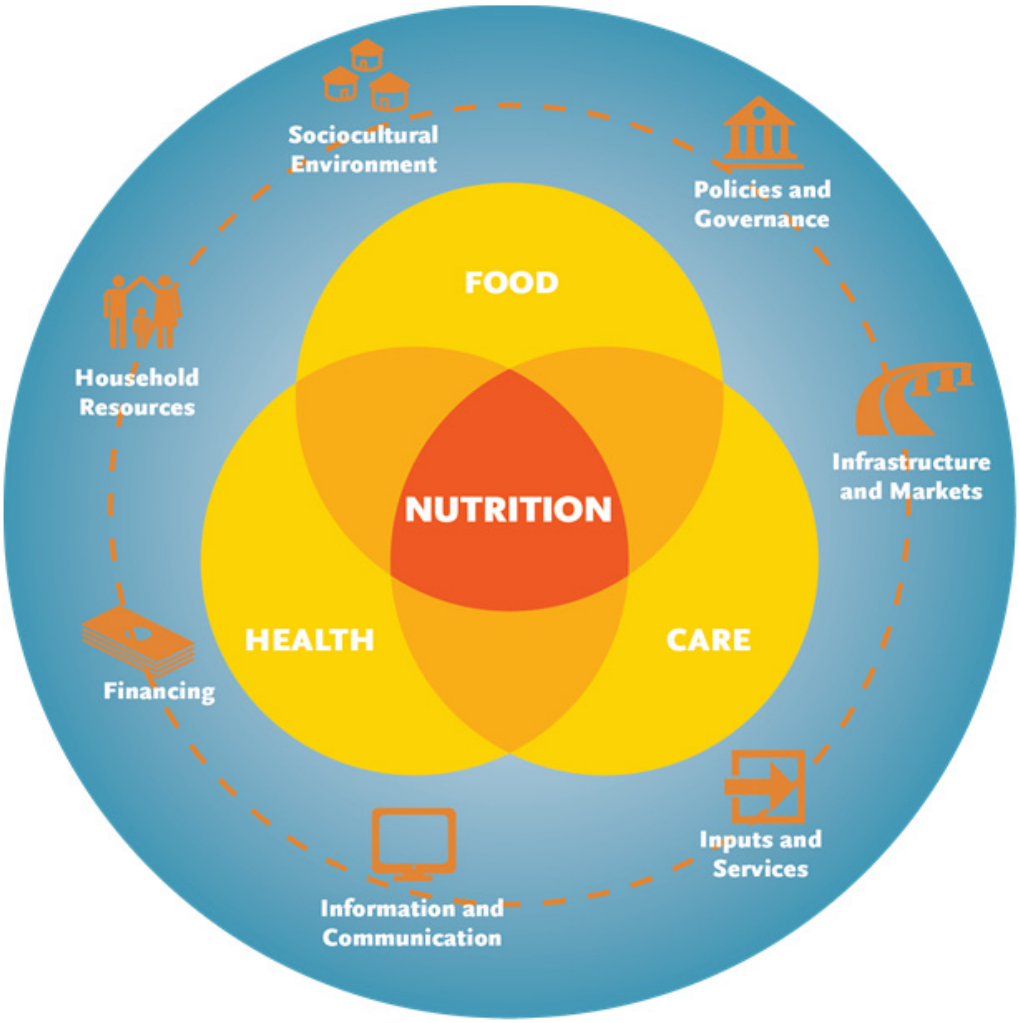
Factors such as food insecurity, food safety issues in the urban food chain, higher access to ultra-processed foods, and lack of access to food coping mechanisms like growing one's own food, are all key factors driving urban malnutrition. Overcrowding and lack of access to adequate waste and sanitation management in urban settings can also drive up infections in children, which in turn makes it harder for that child to absorb adequate nutrients – this combination creates a vicious cycle.



While Indore is paving the way for other Smart Cities in India in many areas, it is lagging behind on the most important aspect of a healthy city - child nutrition. This brief looks at currently available data on the nutrition system in Indore to understand why this may be the case.

Systems Approach to Addressing Child Nutrition

According to the USAID SPRING Project Framework for Applying Systems Thinking to Nutrition, **malnutrition is a product of food security, health services and environment, and care practices.**[3] Each of these, in turn, is influenced by the evolving and interrelated factors related to policies and governance, infrastructure, markets, resources, supplies, services, information, communication systems, financing, resources, and sociocultural norms and values. This brief will use these factors to better understand the support systems for nutrition in Indore.



Methods

Data collection and analysis was conducted **January - April 2021**.

Secondary data were compiled from: Department of Health and Family Welfare, Department of Women and Child Development, National Family Health Surveys 4 & 5, and individual studies.

Primary data on Anganwadi centers (AWCs)[a] were collected via a BHC participatory research study in 8 urban poor communities in Indore.[b]

- 13 AWCs were selected for facility inspection and data extraction.
- 1 worker from each AWC was interviewed.
- Information was collected in 2 phases[c] using a data extraction form developed from an Integrated Child Development Services (ICDS) checklist.
- Data were analyzed using Microsoft Excel.

Sample of Anganwadi Centers

Community	Number of AWCs	Population Covered
Kadavghat	1	2,300
Narwal	1	1,600
Sikandarabad	3	3,159
Rahul Gandhi Nagar	2	3,556
Arjunpura	2	4,079
Indira Ekta Nagar	1	1,300
Amar Tekri	2	2,634
Luniyapura	1	1,500
Total	13	20,128

a. AWCs are part of the ICDS Scheme run by the Government of India under the Ministry of Women and Child Development. It is one of the world's largest programs providing an integrated package of services for holistic child development. AWCs offer supplementary nutrition, pre-school non-formal education, nutrition and health education, immunization, health check-ups, and referral services.
b. The selection of the example neighborhoods was not random; however, the original selection of these neighborhoods was done to achieve diversity across their characteristics, including livelihoods, social behavior, environmental conditions, and infrastructure scores from a desk review conducted by BHC's implementing partner, Centre for Urban and Regional Excellence.
c. The information regarding the five systems areas, including additional questions on the domains of food, health, and care, was collected from all AWCs. Data was collected on Anganwadi workers/workforce, infrastructure, supplies, knowledge and practices, enrollment, completeness of data, and food.

Demography, Income and Literacy

Madhya Pradesh is the second largest state in India. Indore is the **most populous** city in Madhya Pradesh with a population density of **839 inhabitants per square kilometer** (2,170/square mile).[4]

Of the total population of Indore District:[4,5]

13% are under 6 years old.

74% live in urban areas.

48% are female, with an adult sex ratio of **987 women to 1,000 men**. For children under 6, that ratio goes up to **996 girls to 1,000 boys**.

80% of women, and **81%** of all residents, are literate.

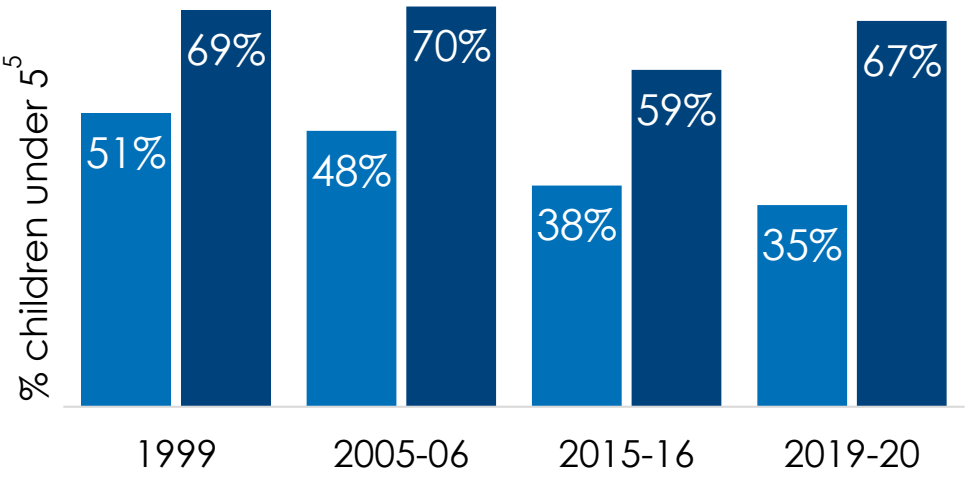
The **average per capita income** in Madhya Pradesh is Rs 98,418.[6]

Literacy rates for Indore District are **above** the national (74%) and state (69%) averages. However, Indore District **lags behind state and national averages for adult and child sex ratios**, indicating various forms of stereotypes ingrained in society.[5]

Status of Child Nutrition in India

In India, children continue to experience **nutrition-related health issues**.

Childhood **stunting** and **anemia** are pervasive issues.



Timely and appropriate breastfeeding and weaning practices in India are not widely practiced.

64% of infants are exclusively breastfed for 6 months.[5]

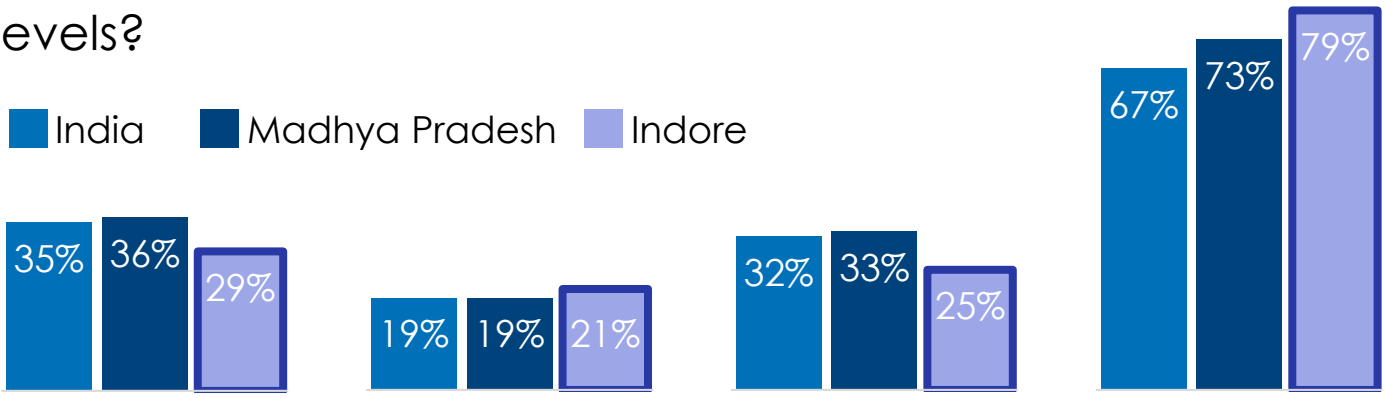
42% of children under 3 years old are breastfed within the first hour after birth.[5]

11% of breastfeeding children 6-23 months old receive an adequate diet.[5]

In India, local urban nutrition services are provided by the district via the **Department of Women and Child Development** and the **Department of Food and Public Distribution** based on population, geography, and socio-economic status.

Status of Child Nutrition in Indore

How do nutrition indicators for **children under 5 years old in urban settings** compare across city, state, and national levels?



Indore has a lower proportion of children with **stunting**.[5]

Wasting averages are similar across the three levels.[5]

Indore has a lower proportion of children who are **underweight.**[5]

Indore has a higher percentage of **anemia** in children.[5]

The literature suggests that **interventions to address nutrition** in Indore should focus on:

- Early initiation of **breastfeeding**.[7]
- Timely initiation of **supplementary nutrition** and **antenatal care**.[8]
- Improved **sanitation** to reduce diarrheal diseases.[9]

Indore has done tremendous work under the Clean India Mission and has been declared the cleanest city in India for five consecutive years (2017-2021).[10] However, BHC's systems mapping process found that certain areas are left behind, especially those involving vulnerable populations. **The city should focus on those left out areas for equitable development and improved child health outcomes in Indore**.[11,12]

Status of Malnutrition Contributors in Indore

Food-related Contributors

100% of primary and middle schools provide midday meals to students.[13] However:[14]

13% of schools have only healthy food available nearby.

37% of schools provide de-worming services.

69% of schools have no unhealthy foods marketed nearby.

26% of food handlers in schools apply food safety precautions.

50% of all households in the lowest wealth quintile had no ration card of any type.[15]

Staple foods fortified with micronutrients in India include:[16]

- **Wheat flour and rice** fortified with iron, vitamin B12 and folic acid.
- **Milk and edible oil** fortified with vitamins A and D.
- **Salt** fortified with iodine and iron.

Health-related Contributors

1.5 million people (50%)
have access to safe drinking water.[17]

6 out of 37 hospitals (16%)
enable breastfeeding under the Baby Friendly Hospitals initiative.[18]

92% of children
12-23 months old receive all vaccines in the first year of life per the national immunization schedule.[18]

74% of infants
9-35 months old receive vitamin A supplementation.[5]

7% of children
12-59 months old receive albendazole.[19]

12% of children
6-59 months old receive 8-10 doses (1ml) of iron and folic acid syrup biweekly.[19]

Status of Malnutrition Contributors in Indore

Care-related *Contributors*

Of children living in urban Madhya Pradesh:[20]

58% receive **any** age-appropriate services from AWCs.

45% receive **supplemental nutrition** services from AWCs.

45% receive **growth monitoring** services from AWCs.

Although **100%** of pregnant and lactating women receive counselling about feeding practices from AWCs, **only:**[5]

64%
of infants are exclusively breastfed for the first 6 months.

29%
of infants are breastfed within the first hour of birth.

14%
of breastfed children 6-23 months old receive an adequate diet.

The city needs to **identify and address** the reasons behind this gap in order to **create a better nutrition care environment for children**.

Systems That Affect Nutrition in Indore

Nutritional status is impacted not just by food, health, and care, but also by the **systems designed to support nutrition**. These include:

Supportive local **policies** related to nutrition, food security (availability, affordability, diversity, safety), health services (protocols related to breastfeeding), and water and sanitation facilities.

Sufficient **financing** to support nutrition activities.

A **workforce** that is well trained and available to provide quality nutrition services (assessment, counseling, treatment).

Complete and well-functioning **nutrition data systems** that include indicators of nutrition outcomes and services in the health information system.

Adequate **facilities and commodities** to support nutrition measurement and supplementation.

What is the status of these systems in Indore?

Status of Nutrition Policies in Indore

Nutrition services in India are guided by **multiple policies**. Few have been updated recently.

Relevant Government Policies for Indore	Last Updated
National Health Mission: Framework for Implementation 2012-2017	2012
National Urban Health Mission: Framework for Implementation	2013
National Nutrition Mission: Administrative Guidelines	2018
POSHAN Abhiyaan (Prime Minister's Overarching Scheme for Holistic Nourishment): Guidelines for Community Based Events	2018
National Health Mission: Home-Based Newborn Care Operational Guidelines	2014
Madhya Pradesh State Nutrition Management Plan	2020-2021

Status of Nutrition Financing in Indore

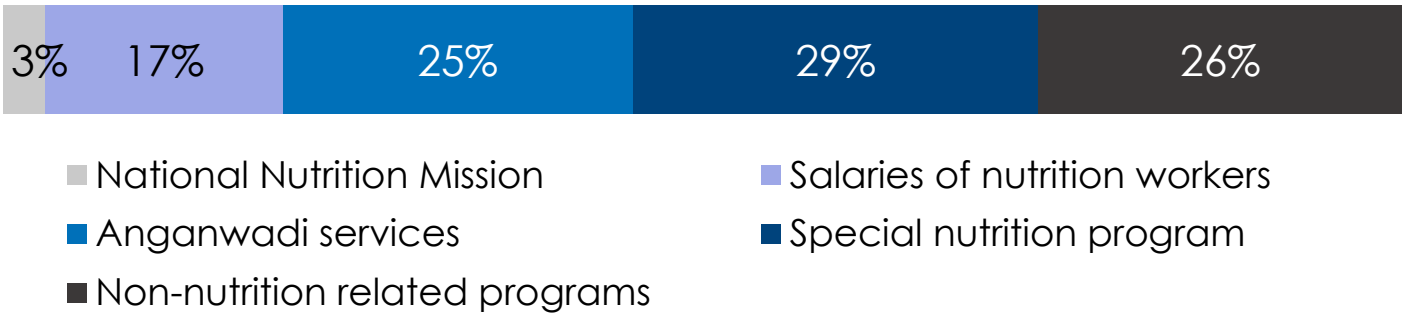
Nutrition services in India are **funded by multiple sources**.

UNICEF and USAID have provided donor funds for nutrition in Indore.

Government nutrition funds in Indore for children under 5 flow primarily through the **Department of Women and Child Development;** additional nutrition funding for mothers and adolescents comes from the **Department of Health and Family Welfare** and **Department of Education** (e.g. mid-day school meals). Funding in these sectors flows from the **state to the district**.

Social welfare and nutrition made up **8-10%** of the total Madhya Pradesh state budget between 2020-2022. **Only 12%** of that went to Anganwadi schemes in 2021-2022.[21]

Analysis of the Madhya Pradesh state budget for Women and Child Development for 2021-2022 showed:[22]



Status of Nutrition Workforce Sufficiency in Indore

India has **three cadres of community health workers** that provide nutrition-related services.**

1. Auxiliary Nurse Midwives (ANM) work out of community facilities primarily providing reproductive, maternal, newborn, and child health services.

841,279 nationwide*[23]

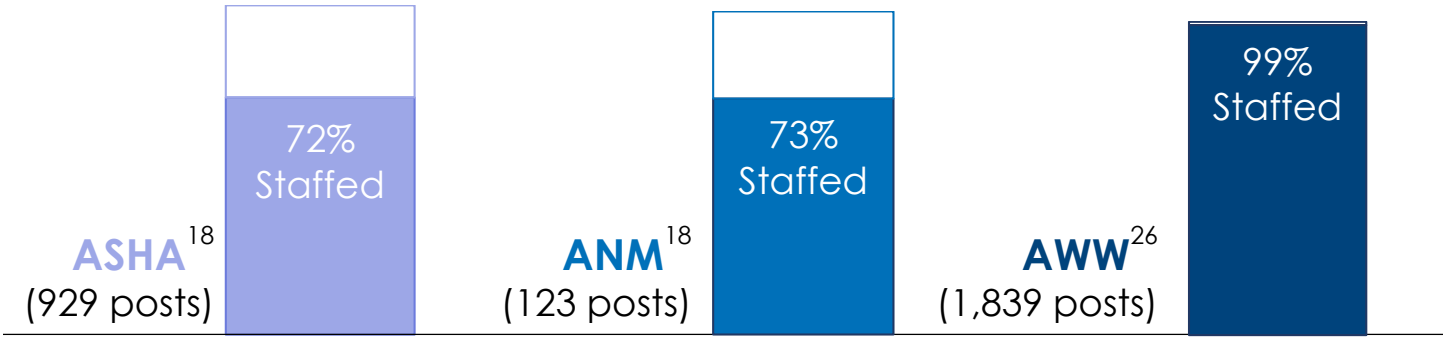
2. Accredited Social Health Activists (ASHA) work in communities and provide a range of health services from family planning to selected newborn care services.

968,483 nationwide*[24]

3. Anganwadi Workers (AWW) or "courtyard shelter" workers focus on nutrition and growth monitoring activities.

1,399,697 nationwide*[25]

In Indore, ASHAs and ANMs have high vacancy rates, while **AWWs are almost fully staffed**.



* ANM data are from 2017, while ASHA and AWW data are from 2019.
** Community health worker cadre definitions courtesy of USAID SPRING Project.

Status of Nutrition Workforce Sufficiency in Indore

At the selected **13 AWCs** BHC surveyed in Indore:

AWWs are an average of

46 years old

with an age range of 22-59 years old

AWWs have been in their role for an average of

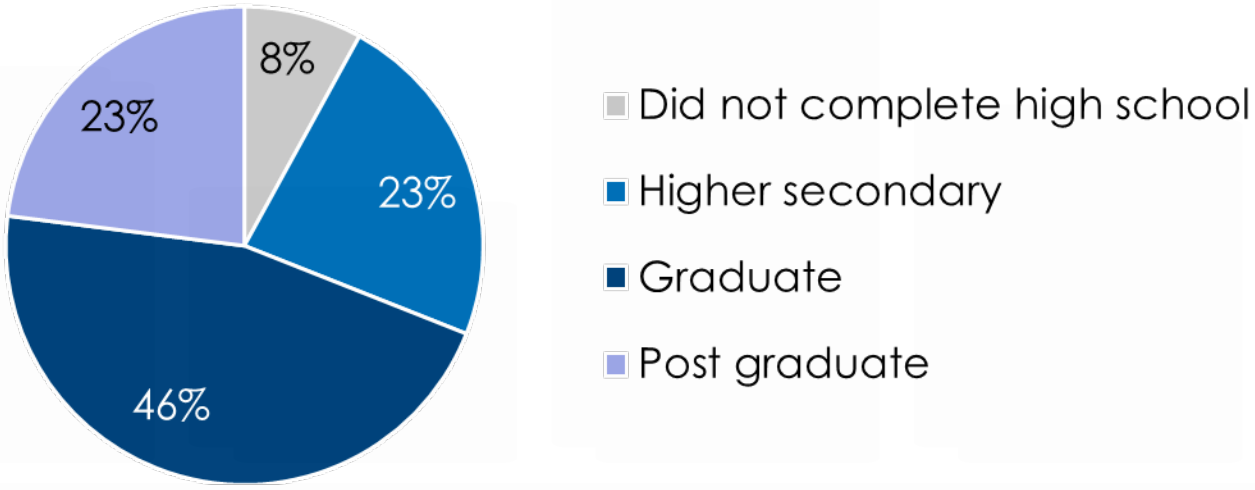
14 years

Only

5 out of 13 AWWs

reside in the same community where the AWC is located

The majority of AWWs surveyed **exceed** the defined education eligibility criteria, which states that AWWs should complete high school.



Status of Nutrition Workforce Training in Indore

92% of the nutrition workforce surveyed in AWCs were trained in the last year on the care and management of severe acute malnutrition.

100% received training on data collection and register data entry.

All who received these trainings felt that the trainings were adequate.

Nutrition workforce should be trained to provide the following services for children:[27, 28, 29]

Assessment*	
Use scales to measure weight of children up to 5 years old	ANM, ASHA, AWW
Measure MUAC of children	ANM, ASHA, AWW
Screen children for bilateral edema	ANM, ASHA, AWW

Support*	
Provide/administer vitamin A supplementation for children 6–59 months old	ANM, ASHA, AWW
Provide/administer micronutrient supplementation	ANM, ASHA, AWW
Provide/administer deworming medication	ANM, ASHA, AWW
Treat moderate acute malnutrition for children under 5 years old	ANM, ASHA
Treat iron-deficiency anemia	ANM, ASHA
Provide home care support for diarrhea	ANM, ASHA
Refer malnourished children	ANM, ASHA

Counseling*	
Provide IEC on vitamin A for children 6–59 months old	ANM, ASHA, AWW
Provide IEC on general micronutrient supplementation	ANM, ASHA, AWW
Provide IEC on de-worming medication	ANM, ASHA, AWW
Provide IEC on complementary feeding practices and continued breastfeeding (6–23 months old)	ANM, ASHA, AWW
Provide IEC on colostrum feeding and exclusive breastfeeding (first 6 months)	ANM, ASHA, AWW
Provide IEC on introduction of soft, semi-solid foods at 6 months old	ANM, ASHA, AWW
Provide IEC on continuing breastfeeding for children less than 6 months old who have diarrhea	ANM, ASHA, AWW
Provide IEC on increasing fluids and continuing solid feeding for children over 6 months old with diarrhea	ANM, ASHA, AWW
Counselling mothers on modification of family food for children 24-59 months old	ANM, ASHA, AWW
Counselling to prevent recurrent illness, especially diarrhea	ASHA, AWW

* Services tables adapted from USAID SPRING Project's *How Do Community Health Workers Contribute to Better Nutrition?* India Profile.

Status of Nutrition Data Systems in Indore

Only **1 out of 13** AWWs know about the ICDS-CAS app that the government introduced for data collection and entry, and for continued learning.

100% of local nutrition workers in Madhya Pradesh reported complete nutrition data last year.[30]

Nutrition data is **not** one of the data streams included in Indore's Smart City Integrated Command Control Center.

AWCs are supposed to maintain **12 paper registers**, but in reality the 13 selected AWCs maintain between **3 and 15**.

AWWs spend an average of

2.7 hours

per week filling in registers.

46%

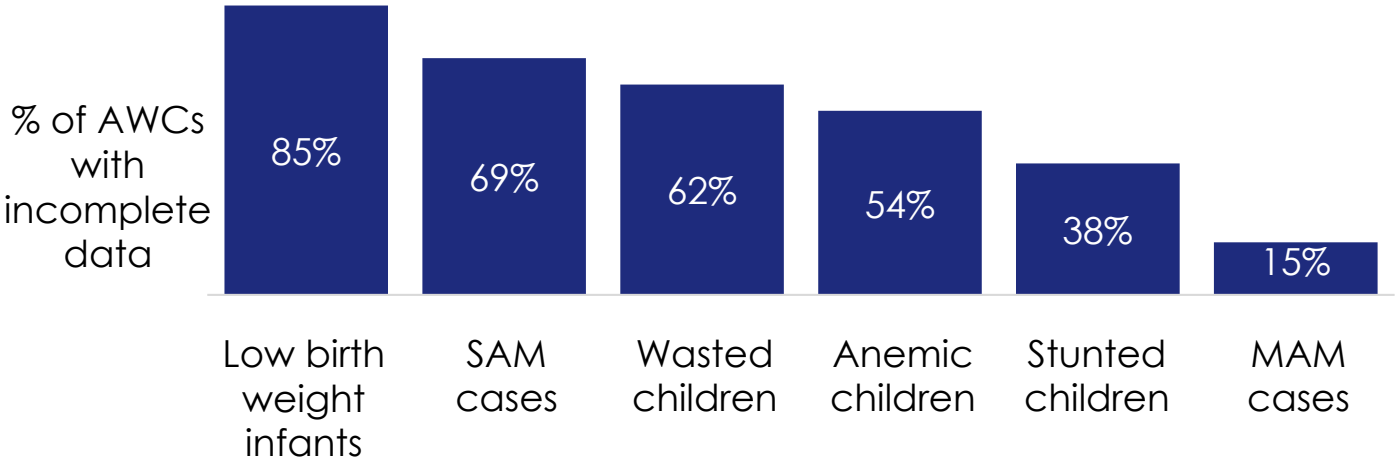
of AWWs have enough empty registers to collect data for the next 30 days.

None

of the AWWs have visible evidence that they use data for performance improvement of community awareness.

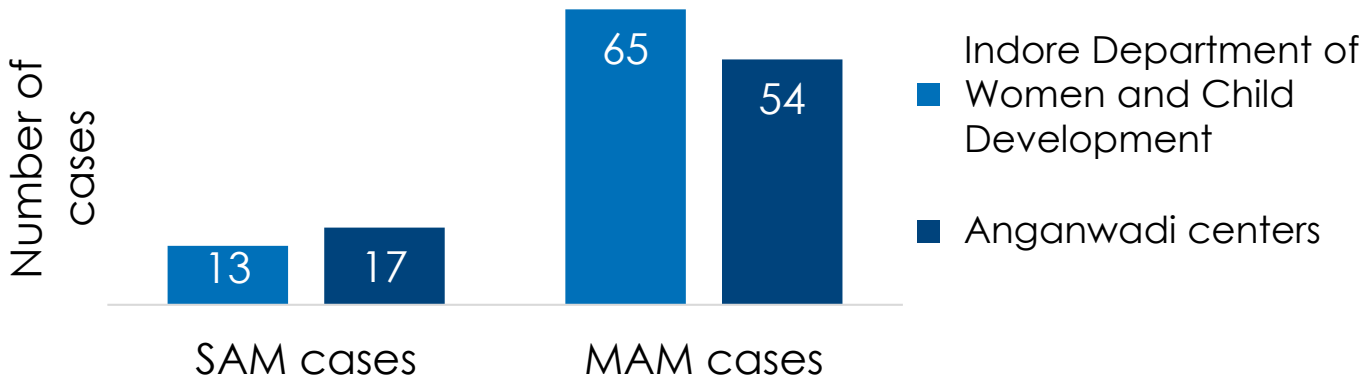
Status of Nutrition Data Systems in Indore

In 2020, many of the **13 AWCs** in Indore had **incomplete child malnutrition data** in their registers:



The city should ensure that all AWWs are sufficiently trained to complete these registers and that the registers are regularly monitored.

The total **SAM and MAM cases** documented by the **Indore Department of Women and Child Development** in 2020 is different than the **AWC** records.



Status of Nutrition Tools and Commodities in Indore

Indore has a total urban population of **2,170,295**

There are **767** AWCs in Indore…

and **1 AWC** for every **2,830 citizens**

The **13 selected AWCs** in Indore feature a number of **basic physical amenities:**

92% are located within the community

their average size is **370 square feet**

53% have a mechanism to make water safe for consumption

39% have a handwashing station

23% have their own building

69% have a drinking water facility

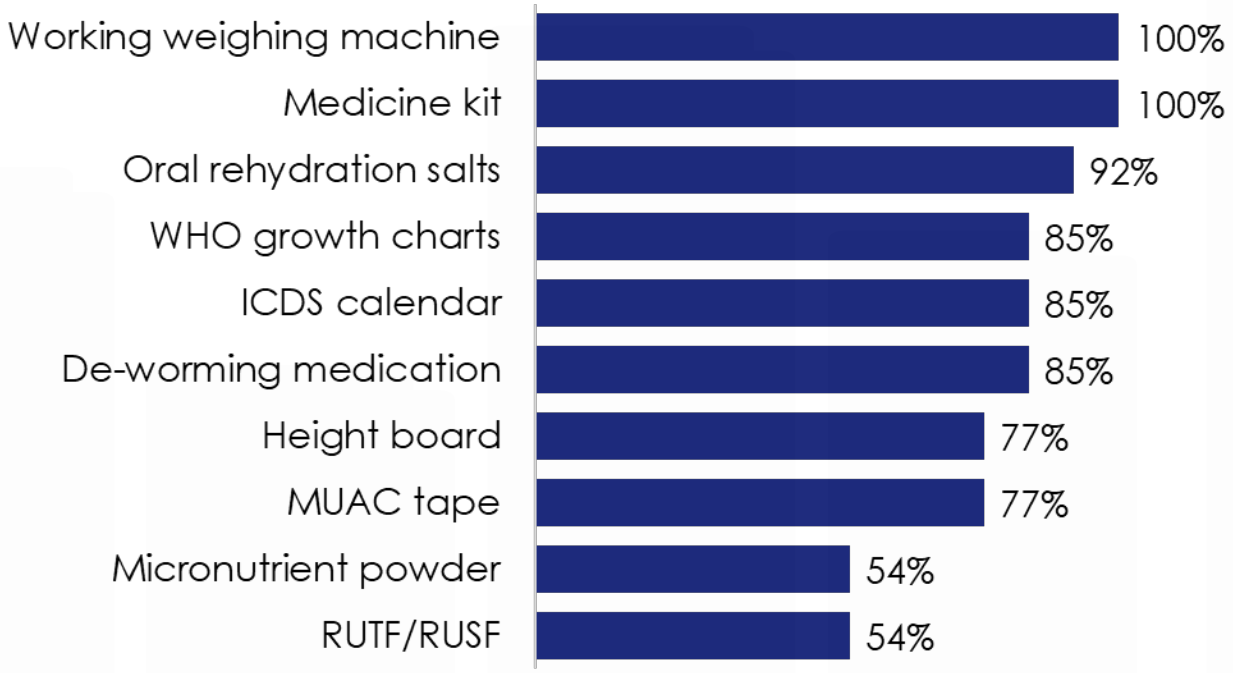
77% are both well-ventilated and well-lit

62% have a toilet

Status of Nutrition Tools and Commodities in Indore

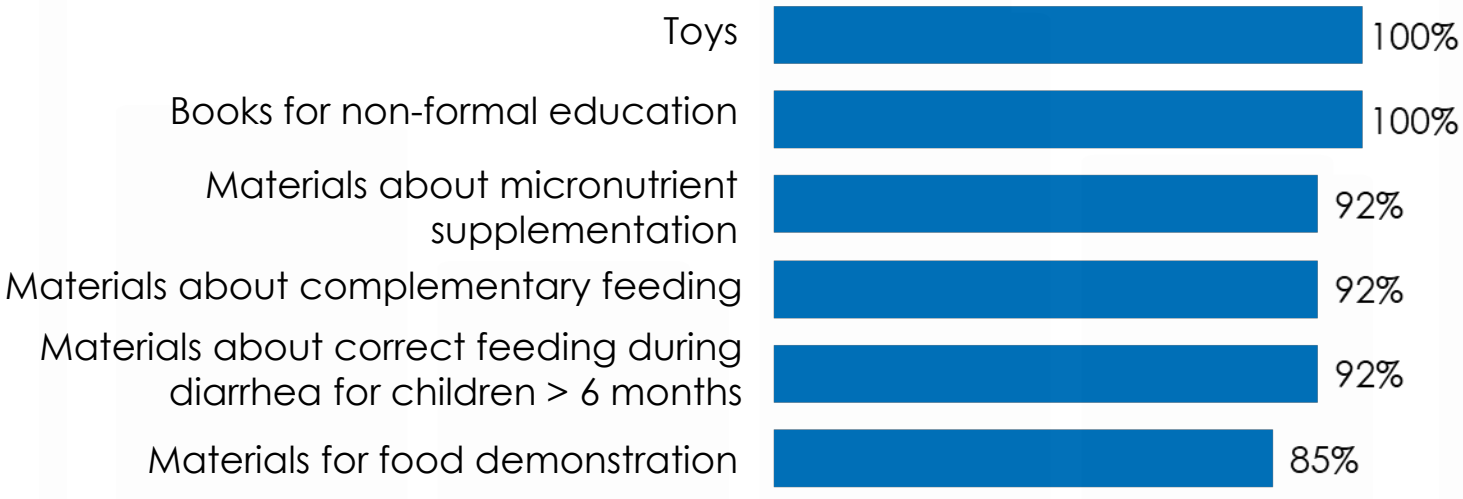
According to the ICDS checklist every AWC should have:

Percent of selected AWCs with essential supplies



IEC and non-formal education is an essential service provided by the AWCs. According to the ICDS checklist every AWC should have:

Percent of selected AWCs with essential materials



What Does This Mean for Indore?

For equitable development, **Indore should invest in inclusive nutrition interventions.** The city should follow the guidance below to strengthen the nutrition system:

Ensure nutrition **policies** are up to date, and are monitored for progress. Inclusion of marginalized populations should be a priority, particularly those groups at highest risk of stunting and anemia. Government at all levels should consider links between health and nutrition services. For example, national guidelines on Health and Wellness Centres do not specify linkages with existing nutrition programs, referrals between health centers and AWCs, or coordination of oversight or data sharing. Considering those four items could strengthen both Health and Wellness Centres and AWCs.

Since government **funding** increases must be negotiated at the district and state level, Indore city may be de-prioritized if more rural areas have higher needs. Donors appear to be focused on other health and early childhood development priorities, and may need to be reminded of the dire nutrition situation.

Nearly all AWW posts in Indore are filled, and most have more than the required amount of education. However, vacancies for ASHAs and ANMs are over 25%. A full team of all three cadres is required for comprehensive health and nutrition services at the community level, and so any vacancies should be addressed. Indore will need to balance **workforce** staffing to ensure AWWs do not become overloaded.

Inaccurate **data** can further hamper the city's efforts to reduce the burden of malnutrition. The city should strengthen supervision and monitoring of data for accuracy. This can also be improved by increasing the usage of data by those who collect it, to accuracy – digital platforms for users could help with this. Including incentivize key nutrition indicators into the ICCC can also increase usage of these data. The Ministry of Women and Child Development is digitizing its data systems, and a number of apps have been introduced. However, use of the apps among Indore's AWWs is low. The department needs to strengthen human capacity to make full usage of these applications.

Indore AWWs face a lack of adequate and permanent **facilities**. Efforts to identify new facilities, particularly for newer settlements, is needed. The AWCs surveyed appeared to be fairly well stocked with **commodities**, except for supplementary powders and foods.

Additional BHC Resources

Building Healthy Cities general and Indore websites: Include summaries of BHC's work and links to a wide variety of project resources and publications.

Indore Systems Map Brief: Summarizes BHC's systems approach in Indore.

Indore Context Systems Map (English and Hindi): Systems map that details key patterns underneath urban health issues in Indore.

Indore Leverage Systems Map: Second phase of systems mapping that identifies key places to address social and environmental determinants of health.

Indore Health-at-a-Glance Profile: Highlights select metrics related to maternal and child health, noncommunicable and communicable diseases, environmental health, and citizen reporting systems.

Food Safety for Mothers and Children (English and Hindi): Video that highlights sources of unsafe foods, how it impacts the health of women and children, and actions we can take to improve food safety.

Health Promoting Schools Baseline Assessment Report: Summarizes findings from an assessment of 148 schools that looked at policies, physical and social environments, links with the community, competencies for healthy living, and health care and promotion services.

Teachers Training Guidelines for Health Promoting Schools: Student health education guidance for teachers at Health Promoting Schools.

Indore Health Needs Assessment: Details findings of a BHC assessment that addressed two main objectives: 1) improving understanding of access, barriers, knowledge, and opportunities for healthy living in the city of Indore across a range of stakeholders; and 2) investigating multisectoral activities related to health and urban planning within Indore's Smart City Initiative.

Indore Noncommunicable Disease Risk Factor & Environment Survey Fact Sheet: Highlights key results from a BHC survey of health behaviors.

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Relevant Policies

National Health Mission: Framework for Implementation 2012-2017

National Urban Health Mission: Framework for Implementation 2013

National Nutrition Mission: Administrative Guidelines 2018

POSHAN Abhiyaan: Guidelines for Community Based Events 2018

National Health Mission: Home-Based Newborn Care Operational Guidelines 2014

Madhya Pradesh State Nutrition Management Plan 2020-2021

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