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# Status of Child Nutrition and Community Nutrition Support Systems

*Makassar, Indonesia*


# BUILDING HEALTHY CITIES

April 2022

THRIVE NETWORKS

IOM UN MIGRATION

URBAN INSTITUTE

## Contents



## Acronyms

| | |
|---|---|
| APBN | National Revenue and Expenditure |
| APBD | Regional/Province Revenue and Expenditure |
| ASDK | One Health Data |
| BHC | Building Healthy Cities Project |
| IEC | information, education and communication |
| JSI | JSI Research & Training Institute, Inc. |
| MUAC | mid-upper arm circumference |
| PHBS | *Perilaku Hidup Bersih dan Sehat* (Healthy and Clean Lifestyle Attitude) |
| SIGIZI | *Sistem Informasi Gizi Terpadu* (Nutrition Information System) |

## 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.

## Recommended Citation

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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: Muh. Afdhal, International Organization for Migration, 2018

# About the Building Healthy Cities Project

The **Building Healthy Cities (BHC) project** is supporting the city of Makassar 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 Makassar 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.

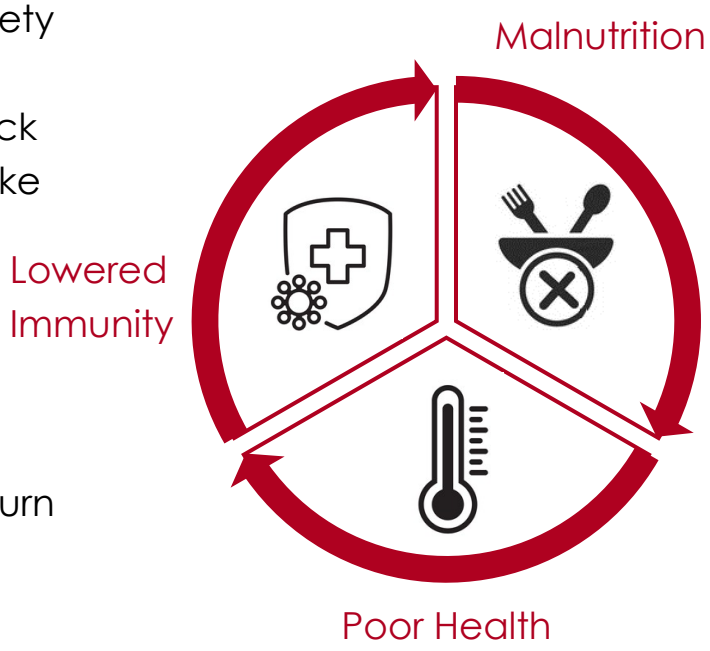
**Use these data to drive decisions** about where in the nutrition system to invest yearly funds.

**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]

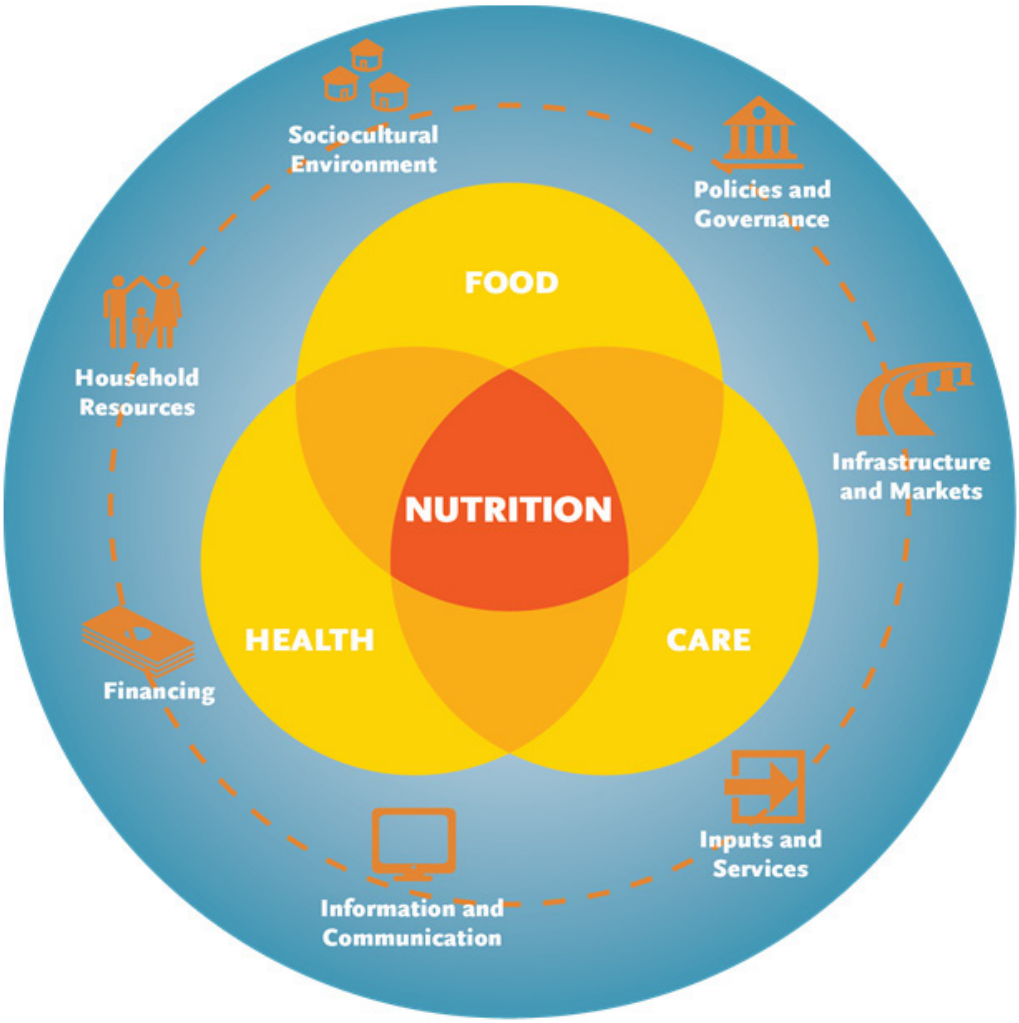
Factors such as food insecurity, food safety issues in the urban food chain, higher access to ultra-processed foods, and lack of access to food coping mechanisms like growing one's own food, are all key factors driving urban malnutrition. Overcrowding and lack of access to adequate waste and sanitation 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 Makassar has a lower proportion of children experiencing nutrition-related diseases compared to the rest of Indonesia, there are still populations that are left out. This brief looks at currently available data on the nutrition system in Makassar to understand where there are areas for improvement.

# 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 Makassar.



# Demography and Income

Makassar is the **fifth largest city** in Indonesia with a population of 1.4 million as of 2020.[4] It is the most densely populated city in South Sulawesi province, at **8,400 inhabitants per square kilometer** (21,700/square mile).[5]

Of the total population of South Sulawesi province:

**7%** is under 5 years old.[5]

**50%** is female, with an adult sex ratio of **987 men to 1,000 women**. For children under 5, that ratio goes up to **1,078 boys to 1,000 girls**.[5]

**16%** live in urban areas.[6]

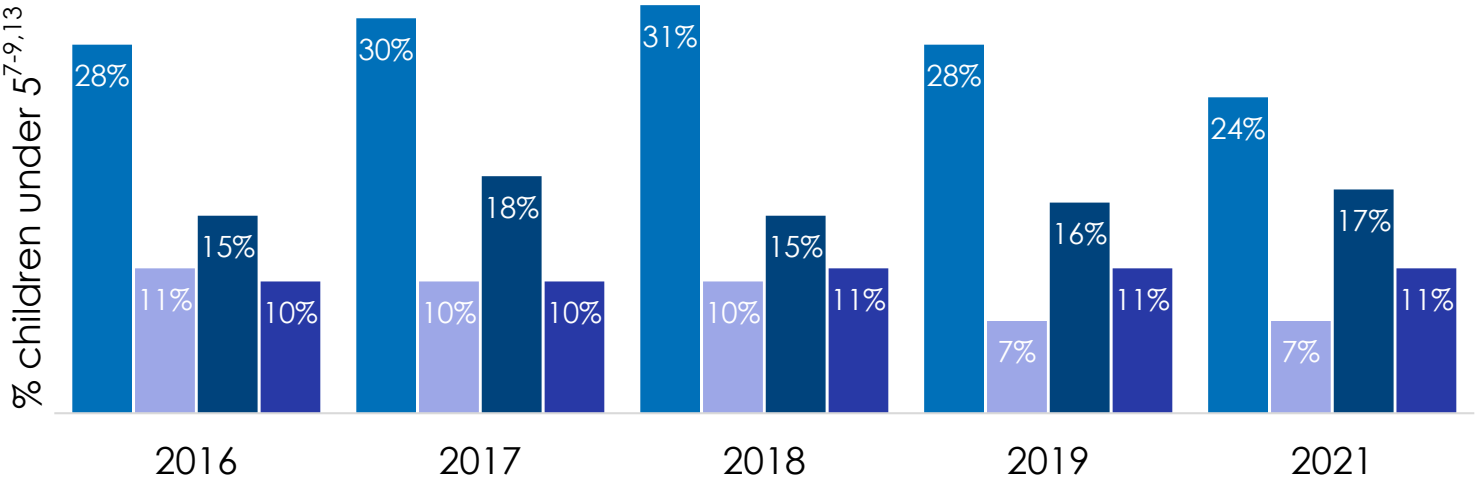
**9%** of residents are unable to afford basic food and non-food needs.[5]

Residents in Makassar are more likely to be able to afford **basic food and non-food needs** than other South Sulawesi residents; only 4% of the Makassar population falls below the poverty line.[5] This better access to food is **reflected in improved nutrition indicators** for children under 5 years old.

# Status of Child Nutrition in Indonesia

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

While childhood **stunting** and **wasting** have decreased in recent years, improvements are small. Meanwhile, the number of **underweight** children has increased, and the number of **overweight** children has remained the same.




**76%** of infants are exclusively breastfed for 6 months.[7]

**58%** of children are breastfed within the first hour after birth.[9]

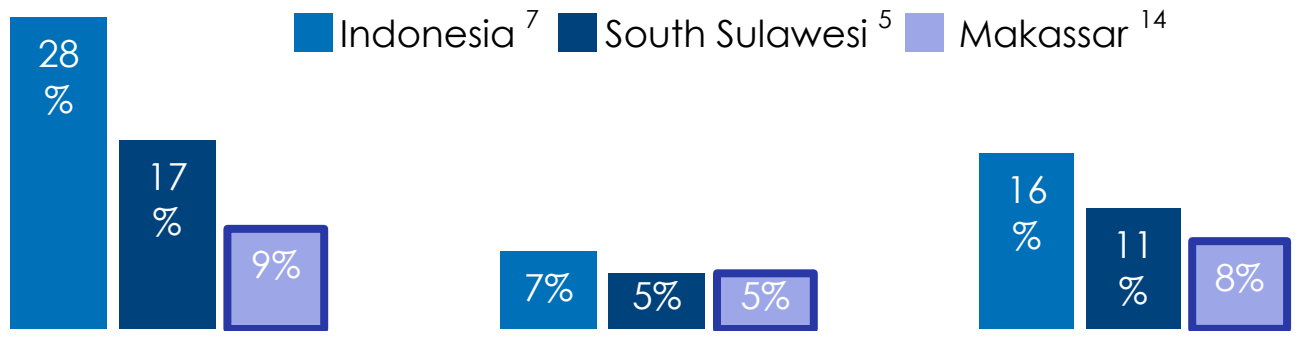
**40%** of children 6-23 months old receive a minimum acceptable diet.[10]

**28%** of children under 5 years old have iron-deficiency anemia.[12]

In Indonesia, local urban nutrition services are provided by the city via the **Health Office** through community-based health facilities based on geographical residence.

# Status of Child Nutrition in Makassar

## How do nutrition indicators for **children under 5 years old** compare across city, province, and national levels?




**Makassar** has the lowest proportion of children with **stunting**.

**Wasting** averages are similar across the three levels.

**Makassar** has the lowest proportion of children who are **underweight.**

The percentage of children experiencing **stunting is higher in remote areas** of Makassar, such as Barrang Lompo Island (11%).[13]

Makassar is committed to improving child nutrition indicators. For example, it is one of the Indonesian cities that aims to **eliminate stunting cases by 2024**. BHC's systems mapping process found that women with lower income (including pregnant women and mothers) had less access to health care and a lack of exposure to health education. To tackle these issues and achieve their stunting goals, Makassar should create a safe and healthy environment for children by improving awareness and access to health care facilities, good nutrition, immunization, and education. This would include strengthening workforce capacity, especially within the posyandu cadres to run community-based posyandu programs that focus on nutrition within the first 1,000 days.

# Status of Malnutrition Contributors in Makassar

## ***Food-related*** *Contributors*

**Nationally**, infants and young children (6-23 months old) **do not** consume an adequate diet:[10]

**60%** of children eat the minimum number of meals per day recommended for their age.

**40%** of children have a diet that meets minimum food diversity standards.

**In Makassar**, public and private schools are **not** required to provide meals to their students.

**35%** of schools provide space for canteens or food stalls to serve healthy food within the school yard.[17]

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

- **Flour** fortified with iron, vitamin B1 and B2, and folic acid.
- **Vegetable oil** fortified with vitamin A.
- **Salt** fortified with iodine.

## ***Health-related*** *Contributors*

### 95% of households

have access to permanent latrines.[14]

### 45% of homes

are connected to PDAM (city water company).[15]

### 90% of children

have health service coverage, including growth monitoring and assessment services.[14]

### 93% of children

6-59 months old receive vitamin A supplementation.[5]

# Status of Malnutrition Contributors in Makassar

## ***Care-related*** *Contributors*

In South Sulawesi, health workers are required to promote **early initiation of breastfeeding**. This includes breastfeeding within the first hour of birth. As a result, in Makassar:

**71%** of infants are **breastfed within the first hour of birth**.[5]

**73%** of infants are **exclusively breastfed for the first 6 months**.[14]

In South Sulawesi, **61%** of children continue breastfeeding 6-23 months old.[8]

While South Sulawesi has robust guidance on early initiation of breastfeeding, 29% of infants in Makassar are not benefiting from that guidance.[8] 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 Makassar

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 Makassar?**

# Status of Nutrition Policies in Makassar

Nutrition services in Makassar are guided by **multiple policies that have recently been updated**.

| Relevant Government Policies | Last Updated | Content |
|---|---|---|
| National Level | | |
| National Medium Term Development Plan (RPJMN) 2020-2024 | 2020 | Universal health coverage, and strategy to accelerate improved nutrition. Stunting focus locations in South Sulawesi include 11 cities/ municipalities. |
| Ministry of Health Law Number 28 | 2019 | Recommended nutrition targets for Indonesia. |
| National Strategy to Accelerate Stunting Prevention 2018-2024 | 2018 | Pillars of stunting prevention acceleration:<br>1. National and regional leadership and commitment.<br>2. National behavior change communication campaign.<br>3. Central, regional, and rural program convergence.<br>4. Food and nutrition security.<br>5. Monitoring and evaluation. |
| City Level | | |
| Perilaku Hidup Bersih dan Sehat (PHBS) or Healthy and Clean Lifestyle Attitude | 2015 | Indicators include delivery assisted by health workers, exclusive breastfeeding for infants 0-6 months old, health insurance ownership, no smoking, active lifestyle, and healthy dietary patterns. |
| Hari Pertama Kehidupan (HPK) or First 1,000 Days of Life | 2012 | Integrated nutritional interventions such as immunization, nutrition for pregnant women, exclusive breastfeeding promotion, breastfeeding, etc. |
| Healthy Alley Program (under PHBS) | 2015 | Indicators include environmental health, alley appearance, flood water drainage, garbage removal, security systems, no smoking areas, active posyandu, and community working groups. |

# Status of Nutrition Financing in Makassar

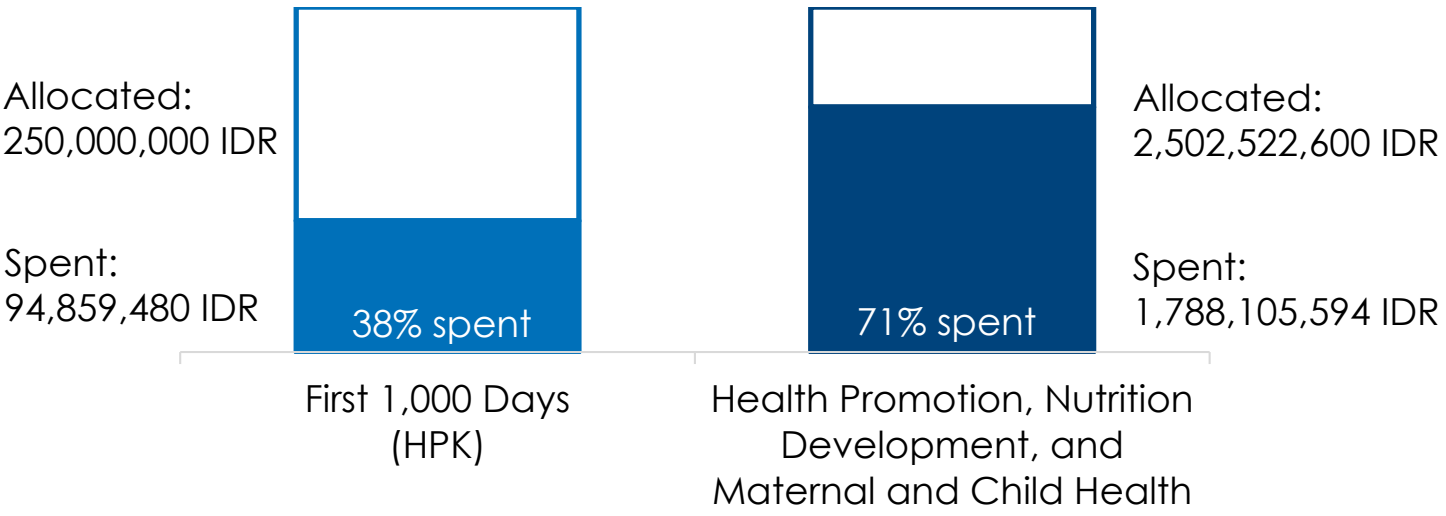
Nutrition services in Makassar are **funded by multiple sources**.

**UNICEF, USAID, and Jenewa Institute** have provided donor funds for nutrition in Makassar.

Government nutrition funds in Makassar come from the national, province, and city levels: National Revenue and Expenditure (**APBN**), Regional/Province Revenue and Expenditure (**APBD**), and City Revenue and Expenditure (**City APBD**).[13,18]

Health funds made up **14%** of the total Makassar city budget in 2019, while **0.2%** of the total city budget was dedicated to nutrition programs.[13]

Analysis of APBN and APBD nutrition funds spent by South Sulawesi Health Department on two nutrition programs in 2019 showed:[18]




Reasons for **unspent funds** included delayed travel and program activities, and equipment that could not be purchased because the intended facilities had inadequate support infrastructure.[19]

# Status of Nutrition Workforce Sufficiency in Makassar

Nutrition services are provided at **two types of community health facilites** in Makassar.

**Puskesmas** are primary health care centers that deliver a wide range of health services, to support the health of both the individuals and communities within their working area. Puskesmas staff include general practitioners, nurses, midwives, pharmacists, nutritionists, and others.[20]

Makassar has **47 puskesmas**, which is approximately 1 puskesmas per 29,800 people.[14]

**71 nutritionists**
across all puskesmas provide nutrition services.[14]

**217 midwives**
across all puskesmas provide reproductive, maternal, and newborn health services.[14]

**Posyandu** are extensions of puskesmas at the neighborhood or sub-village level, managed by the community and staffed by community health workers or other health cadres. Posyandu monitor and support maternal and child health, nutrition, immunization, and family planning. Staff from the nearest puskesmas come to the posyandu to conduct medical examinations, immunization, family planning, and other basic health services.[20]

Makassar has **100% of the posyandu** recommended by policy.[5]

**2,020 health workers**
across all posyandu provide a range of health services.[14]

**1 posyandu** serves on average **138 children** under 5 years old.[13]

# Status of Nutrition Workforce Training in Makassar

**Puskesmas** workers must have at minimum a bachelor's degree in nutrition, be an Indonesian citizen, and be 18-35 years old at the time of their application. They must also commit to the role for at least 10 years.[22]

**Posyandu** workers are residents of the posyandu catchment area, and are selected by the community. They must be able to read and write, and have time available to commit to the role.[23]

Health workers in puskesmas and posyandu in Makassar are trained to provide the following nutrition services for children:[21,14]

| Assessment* | |
|---|---|
| Use scales to measure weight of children up to 5 years old | Puskesmas Posyandu |
| Use length boards to measure length of children up to 2 years old | Puskesmas Posyandu |
| Measure MUAC of children | Puskesmas Posyandu |
| Screen children for bilateral edema | Puskesmas Posyandu |

| Support* | |
|---|---|
| Provide/administer vitamin A supplementation for children 6–59 months old | Posyandu |
| Provide/administer micronutrient supplementation | Posyandu |
| Provide/administer deworming medication | Posyandu |
| Treat moderate acute malnutrition for children under 2 years old | Posyandu |
| Treat severe acute malnutrition with ready-to-use therapeutic foods or ready-to-use supplementary foods | Posyandu |
| Treat iron-deficiency anemia | Posyandu |
| Provide home care support for diarrhea | Posyandu |
| Refer malnourished children | Posyandu |

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

* 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 Makassar

Nutrition data is reported into the Ministry of Health's **Nutrition Information System or *Sistem Informasi Gizi Terpadu* (SIGIZI)**. Implemented nationally, SIGIZI records and reports nutrition and program performance data. It also lets users track the nutritional status of individuals over time, allowing for health workers to monitor malnutrition treatment and referrals.[24]

Nutrition data **is one of the data streams** included in Makassar's central data system One Health Data or ASDK.[25]

**All 47 puskesmas** in Makassar have access to ASDK to report their nutrition data, but in 2020 **only 1 puskesmas** had a 100% nutrition data reporting rate.[25]

**83%** of all children in Makassar have nutrition data recorded in official records.[14]

**While the city has successfully ensured that all puskesmas have access to ASDK, they should also ensure that data is regularly entered into the system.**

# Status of Nutrition Tools and Commodities in Makassar

In Indonesia, the Ministry of Health mandates what equipment and materials puskesmas and posyandu should have.

Certain materials are distributed by the Ministry, such as:

- Counselling cards and brochures for infant and young child feeding.
- Guidebooks on maternal and child health.
- Manuals for managing noncommunicable diseases.

In Makassar, **82%** of puskesmas/posyandu have the equipment needed for monitoring the growth of children 0-59 months old:[17]

Scale

Height tape

MUAC tape

# What Does This Mean for Makassar?

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

Ensure nutrition **policies** are monitored for progress. Inclusion of populations in remote areas with higher rates of nutrition-related diseases, such as Barrang Lompo Island, should be a priority.

A large chunk of government **funds** intended for nutrition programs is not being spent. While this is an issue to be dealt with at the province level, the city should advocate for including a broader list of services in certain programs, to make spending funds easier. For example, while Makassar residents have access to free basic health care in puskesmas, certain services such as diabetes screenings are excluded.[26,27]

To meet goals around stunting reduction, the city should strengthen **workforce** capacity, especially within the posyandu cadres to run community-based posyandu programs that focus on nutrition within the first 1,000 days.

While the city has successfully ensured that all puskesmas have access to the central **data** system, they should also ensure that data is regularly entered into that system.

While there is robust guidance on what **materials and supplies** puskesmas and posyandu should have, there is little data on what is actually available in each facility, outside of growth monitoring tools. The city should integrate this reporting into the central data system to ensure that facilities are well stocked.

# Additional Resources

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

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

**Makassar Context Systems Map (English and Bahasa):** Systems map that details key patterns underneath urban health issues in Makassar.

**Makassar Leverage Systems Map (English and Bahasa):** Second phase of systems mapping that identifies key places to address social and environmental determinants of health.

**Makassar 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 Bahasa):** 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.

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

**Workshop Report for Training on Infant and Young Child Feeding and Integrated Management of Acute Malnutrition:** Summarizes workshop content and results from a five day stunting prevention training for Barrang Lompo Island puskesmas and posyandu health workers.

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