HEALTHY MOTHERS HEALTHY BABIES

Micronutrient FORUM

Landscape analysis of the antenatal MMS situation in Latin America and the Caribbean

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CONTENTS

FOREWORD

This Landscape Analysis aimed to report the situation of Multiple Micronutrient Supplementation (MMS) in Latin America and the Caribbean (LAC). The report offers a general overview about maternal and child malnutrition, antenatal care coverage, policies and guiding framework for antenatal supplementation, as well as some of the main stakeholders involved in the implementation and advocacy of MMS in twelve LAC countries reviewed. In addition, country profiles of eight out of these twelve countries are presented – Argentina, Bolivia, Brazil, Guatemala, Haiti, Mexico, Peru, and Venezuela – selected based on their high burden of maternal anemia and diverse experiences with antenatal supplementation.

Haiti has begun initial implementation of United Nations International Multiple Micronutrient Antenatal Preparation (UNIMMAP) MMS, supported by implementation research. Mexico and Venezuela are currently in the exploration phase, working to establish an enabling environment for UNIMMAP MMS. Argentina and Peru bring long-standing experience with iron and folic acid (IFA) supplementation. Brazil and Guatemala continue to recommend antenatal iron and folic acid separately. Bolivia stands out for its use of a ready-to-use supplement in addition to standard antenatal iron supplementation.

EXECUTIVE SUMMARY

The Latin American and Caribbean (LAC) region experienced notable progress in maternal and child health. However, persistent socioeconomic disparities and high rates of adolescent pregnancy continued to adversely affect maternal nutrition outcomes. The region also faced the triple burden of malnutrition, with rising rates of non-communicable diseases alongside anemia and micronutrient deficiencies. Among pregnant women, anemia remained a significant public health concern – ranging from mild in countries such as Brazil and Guatemala to severe in Haiti. In several countries, including Argentina and Mexico, anemia prevalence among pregnant women was nearly twice as high as among non-pregnant women, highlighting the urgent need to strengthen antenatal supplementation policies and programs. Additionally, preterm birth rates in countries such as Brazil and Guatemala mirror those in Southern Asia and sub-Saharan Africa, highlighting the need for stronger antenatal policies, including consideration of MMS over IFA due to its superior impact on birth outcomes.

All twelve countries reviewed had national antenatal care (ANC) guidelines, with some – such as Bolivia and Ecuador – incorporating intercultural approaches. Most countries recommended at least four ANC visits, beginning in the first trimester. National guidelines predominantly focused on iron and folic acid (IFA) supplementation. Notably, Bolivia, Brazil, Guatemala, and Venezuela recommended iron and folic acid as separate supplements. None of the reviewed countries included MMS in their ANC guidelines. Although antenatal MMS was not included in the 2015 ANC guidelines, Nicaragua stood out for adding it to the essential medicines list (EML) in 2022.

Although MMS was not yet included in formal ANC guidelines, several countries had initiated MMS-related activities in practice. Mexico distributed MMS nationally between 2012 and 2018 and was considering its reintroduction, supported by UNIMMAP MMS donations from Vitamin Angels for pilot efforts. In Haiti, UNIMMAP MMS was distributed by Vitamin Angels outside of the official ANC framework. In Venezuela, the Ministry of Health is working with UNICEF to pilot regional MMS distribution. In countries such as Brazil, Colombia, Guatemala, Mexico, and Peru, MMS was widely available through the private sector, though not integrated into public health services. A recent market review found that 65% of MMS products available in these countries partially aligned with the UNIMMAP formulation.

Antenatal supplementation faced several barriers and bottlenecks to national-scale coverage. Although it was freely provided through public health systems and financed by the state in countries such as Argentina, Bolivia, Brazil, Guatemala, Haiti, Mexico, Peru, and Venezuela, program implementation encountered common challenges. In Argentina, Brazil, and Guatemala, segmented health systems led to inconsistent supplementation recommendations between public and private healthcare services. In Bolivia, supplementation access was conditional on programme enrolment and ANC attendance. Systematic monitoring of supplementation distribution remained limited across the region, and evidence on adherence and acceptability was scarce. Frequently reported barriers included the unpleasant taste of supplements and low levels of maternal education.

FINAL RECOMMENDATIONS FOR DECISION-MAKERS IN THE LAC COUNTRIES REVIEWED

LAC countries must remain vigilant to the ongoing issue of hidden hunger. Rising rates of overweight and non-communicable diseases do not mean micronutrient deficiencies that lead to maternal anemia and other serious health consequences have been resolved. Yet, a lack of recent nationally representative data on micronutrient deficiencies in many countries makes it difficult to fully understand the scale and nature of the problem. Continued monitoring is essential to ensure equitable progress in maternal and child health. Investing in micronutrient deficiency prevention during pregnancy improves maternal outcomes, supports child development, and yields long-term economic benefits. Clear, consistent ANC guidelines – aligned across public and private sectors – can improve adherence and reduce confusion among pregnant women and health providers. Additionally, countries are encouraged to explore the implementation of MMS as a strategy to address maternal malnutrition and improve birth outcomes. This can be supported by the Healthy Mothers Healthy Babies (HMHB) Consortium.


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ACRONYMS

ANC	Antenatal Care
DHS	Demographic and Health Surveys
EML	Essential Medicines List
HMHB	Healthy Mothers Healthy Babies Consortium
ID	Iron Deficiency
IDA	Iron Deficiency Anemia
IFA	Iron-Folic Acid
LAC	Latin America and the Caribbean
LBW	Low Birth Weight
MMS	Multiple Micronutrient Supplementation
NTDs	Neural Tube Defects
PAHO	Pan American Health Organization
RUTFS	Ready to Use Therapeutic Foods
UNICEF	United Nations International Children's Fund
UNIMMAP	United Nations International Multiple Micronutrient Antenatal Preparation
VA	Vitamin Angels
WHO	World Health Organization
WRA	Women of Reproductive Age

INTRODUCTION AND METHODOLOGY

The nutritional situation in Latin America and the Caribbean (LAC) is heterogeneous, yet most countries in the region face the triple burden of malnutrition: undernutrition, overweight and obesity, and micronutrient deficiencies. Notably, LAC is the only region where stunting rates have increased since 2016, with the most significant rises observed in Argentina, Panama, Guatemala, and Mexico (1). Maternal anemia remains a significant public health concern in the region, with prevalence levels ranging from mild to severe public health importance (2). Other micronutrient deficiencies affecting women of reproductive age, pregnant women, and newborns are rarely monitored systematically, limiting effective policy response and intervention planning.

Anemia and micronutrient deficiencies during pregnancy can have long-term consequences, including an increased risk of pregnancy loss, night blindness and maternal mortality[3]. Maternal anemia is also associated with adverse newborn outcomes, such as low birthweight and shortened gestational duration[3, 4]. These risks underscore the importance of preventing and treating maternal anemia as part of adequate antenatal care.

Antenatal Multiple Micronutrient Supplementation (MMS) for pregnant women has been proven to improve maternal nutrition status and, in comparison with iron and folic acid supplements, can further reduce the risk of adverse birth outcomes such as preterm birth, stillbirth, low birth weight, and small-for-gestational-age birth (5). **Therefore, this Landscape Analysis examined the situation of MMS for pregnant women in Latin America and the Caribbean**, with the following sub-objectives:

- **Assessed the need for MMS in the region** by reviewing current data on anemia and micronutrient deficiencies among women of reproductive age and pregnant women and identifying nutritional gaps that MMS could help address.
- **Identified countries currently implementing MMS** by mapping where MMS – particularly UNIMMAP MMS – is in use across LAC and determining the scale of these implementations.
- **Mapped key stakeholders in the MMS landscape** by identifying normative and implementing agencies involved in MMS-related initiatives, including government, UN agencies, NGOs, and academics.
- **Determined potential host countries for a regional convening** by identifying or recommending countries that offer a strategic location and enabling environment, considering factors such as political stability and logistical accessibility.

A comprehensive desk review was conducted between April and May 2025 to analyze the most recent key indicators related to maternal nutrition and antenatal care (ANC) policies and programs. Data were extracted from national nutrition and health surveys, Demographic and Health Surveys (DHS), reports from PAHO, WHO, UNICEF, and other international organizations, as well as policy documents, peer-reviewed publications, and relevant grey literature. To clarify and validate the findings from the desk review, consultations were held with key informants, including authors of the reviewed literature and professionals working on maternal-child nutrition or micronutrients in the reviewed countries. In most cases, these informants provided additional resources or referred us to other experts in the field, further enriching the analysis.

Twelve countries were selected for inclusion in the landscape analysis of the MMS situation: Argentina, Bolivia, Brazil, Colombia, Ecuador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Peru, and Venezuela. The selection was guided by two main criteria:

- High burden of maternal and child malnutrition: Countries such as Bolivia, Haiti, Honduras, and Nicaragua reported some of the highest rates of maternal anemia and childhood stunting in the region, underscoring the urgent need for evidence-based antenatal interventions such as MMS.

- Regional representation and diversity: The selected countries included both large-population nations with diverse health systems and policy environments (e.g., Brazil, Mexico, Argentina) and smaller low- and middle-income countries (e.g., Haiti, Nicaragua, Honduras) that face distinct logistical and policy challenges. This selection captured a broad spectrum of sociopolitical, economic, and geographic contexts across the Andean, Central American, Caribbean, and Southern Cone subregions.

Countries were further classified into two groups – eight high-priority countries and four lower-priority countries – based on anemia burden, availability of relevant data, and their stage of engagement with MMS-related actions. Detailed country profiles were developed for the high-priority countries to support further analysis and planning.

MATERNAL AND CHILD NUTRITION AND HEALTH

DEMOGRAPHIC CONTEXT

Although most LAC countries have made significant progress in maternal and child health indicators (6) Ref, the region continues to exhibit some of the highest levels of socioeconomic inequity globally. A large proportion of the population still faces poor health and nutritional outcomes (7) alongside persistently high rates of adolescent pregnancy (8).

Table 1 presents the latest data on the total population, total births, prevalence of adolescent pregnancies, and Human Development Index (HDI) for the twelve countries of interest.

Table 1. Demographic and Socioeconomic Indicators

	Total population [a] (9)	Total births	Adolescent pregnancy (%)	HDI [e] (10)
Argentina	45,811,866	504,000 [b] (11)	9.5 [d] (12)	0.849
Bolivia	12,539,338	261,0033 (13)	15.0 [e] (14)	0.698
Brazil	212,605,316	1,511,1703 (15)	10.9 [c] (15)	0.760
Colombia	53,289,802	212,398 [a] (16)	N/A	0.758
Ecuador	18,250,656	238,772 [b] (17)	14.5 [b] (17)	0.765
Guatemala	18,616,836	377,000 [b] (11)	18.0 [f] (18)	0.629
Haiti	11,872,449	258,000 [b] (11)	N/A	0.552
Honduras	10,960,366	234,000 [b] (11)	23.0 [e] (19)	0.624
Mexico	131,670,117	1,820,888 [b] (20)	14.8 [b] (20)	0.781
Nicaragua	6,984,463	132,000 [b] (11)	N/A	0.669
Peru	34,485,139	540,000 [b] (11)	12.7 [f] (21)	0.762
Venezuela	28,488,916	432,648 [b] (22)	N/A	0.669

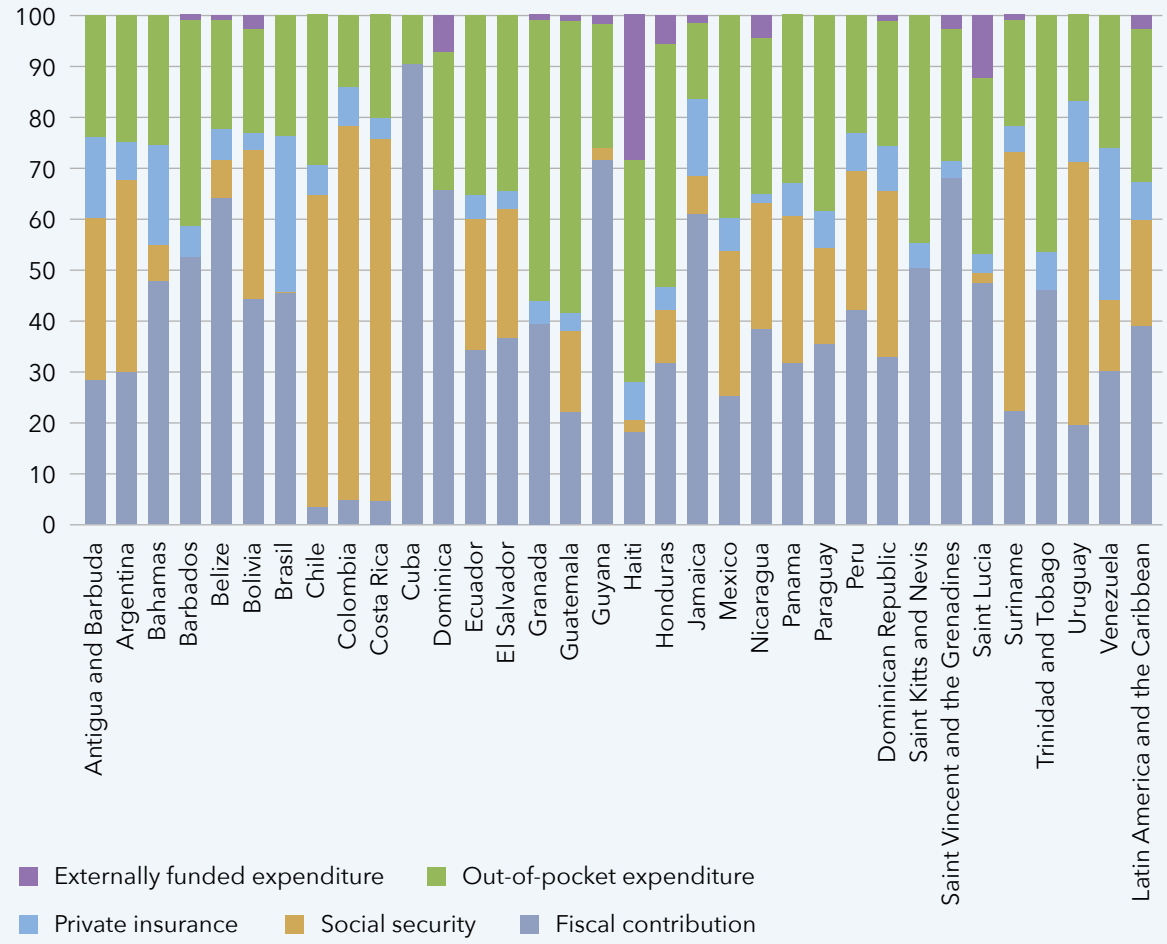
[a] Data for 2025, [b] Data for 2023, [c] Data for 2024, [d] Data for 2021, [e] Data for 2022, [f] Data for 2018. Human Development Index (HDI): High HDI >0.800; Medium HDI 0.500-0.799; Low HDI <0.500. NA Not Available Data.

HEALTH SYSTEMS SEGMENTATION

In most countries across the region, health system segmentation has resulted in the development of largely separate subsystems, contributing to persistent inequalities in access, quality of care, and health financing. Typically, these segmented systems divide the population into three groups:[1] individuals living in poverty, those who are unemployed, or those engaged in informal work without labor protections, who primarily depend on the public health system;[2] formally employed individuals and their families, who receive care through social security health services; and[3] higher-income groups, who access healthcare primarily through the private sector[23].

As illustrated in **Figure 1**, the segmented nature of health systems in the region reflected in the distribution of public health spending across different components. In only a few countries – such as Cuba – fiscal contributions dominated, indicating the presence of national health services. In contrast, social security played a central role in countries like Colombia. In several others, including Haiti, Honduras and Guatemala, high levels of out-of-pocket spending – combined with private insurance – accounted for more than half of total health financing, highlighting the financial burden placed on individuals and the limited reach of public coverage.

Figure 1. Segmented health expenditure across LAC countries in 2020[23]

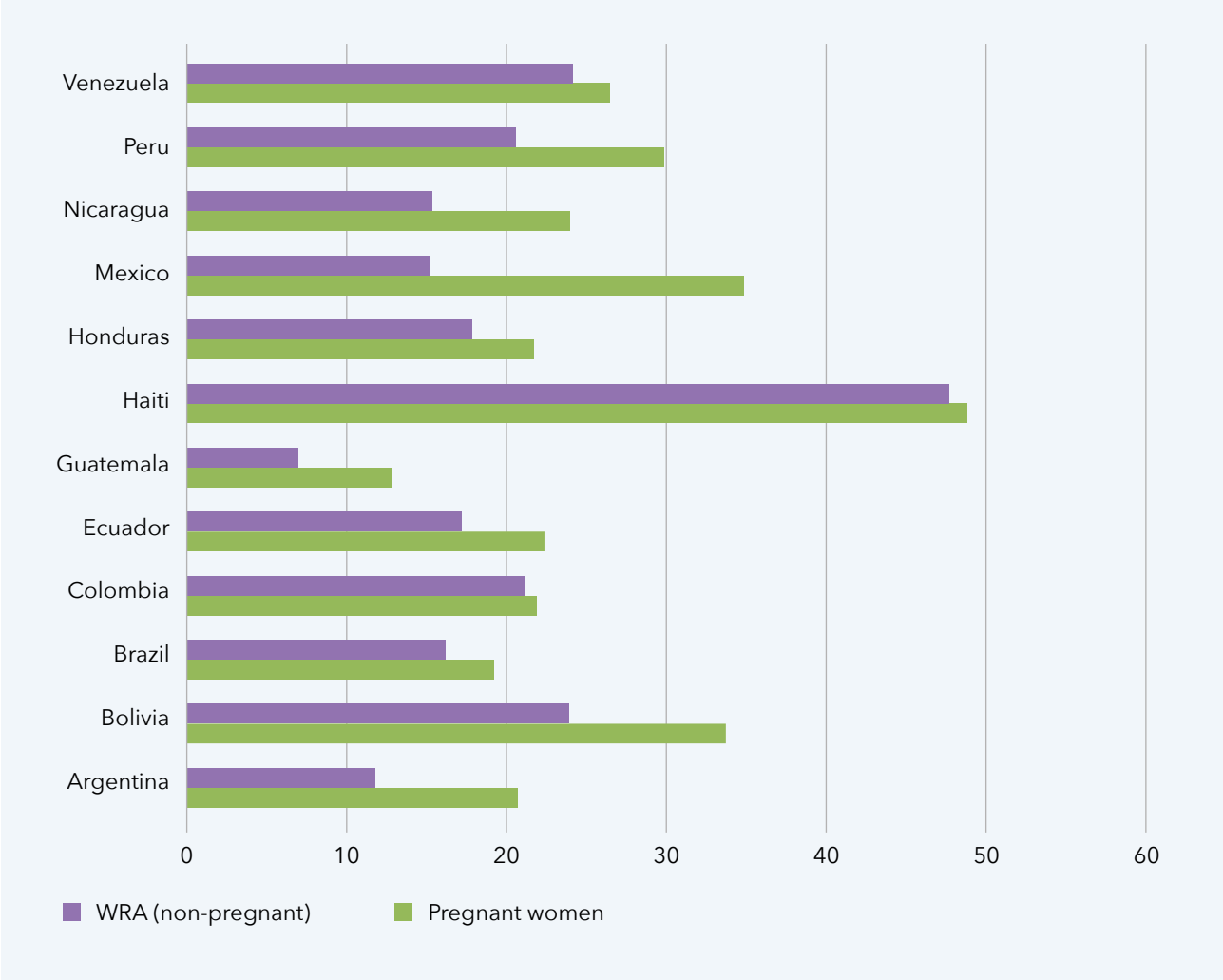


PREVALENCE OF ANEMIA IN PREGNANT WOMEN AND WOMEN OF REPRODUCTIVE AGE (WRA)

The public health significance of anemia among pregnant women in the twelve selected LAC countries ranged from mild in Brazil and Guatemala, to moderate in Argentina, Bolivia, Colombia, Ecuador, Honduras, Mexico, Nicaragua, Peru, and Venezuela, and severe in Haiti (**Figure 2**). However, when examining regional data, it became clear that certain areas were more affected than national averages suggested. For example, in Mexico, the prevalence of anemia among pregnant women in rural areas was 42.1%–7.2 percentage points higher than the national prevalence of 34.9%[24].

Notably, in countries such as Argentina, Mexico, and Guatemala, the prevalence of anemia among pregnant women was nearly twice that of non-pregnant women of reproductive age. While pregnancy is known to increase the risk of anemia, this pronounced disparity underscores the critical importance of effective antenatal supplementation strategies in the region.

Figure 2. Prevalence of Anemia among pregnant women and WRA non-pregnant in 2019[2, 24, 25]



PREVALENCE OF NEURAL TUBE DEFECTS, LOW BIRTH WEIGHT AND STUNTING

Data on the prevalence of neural tube defects (NTDs) across the region were limited, and in most cases, either outdated (collected prior to 2010) or not nationally representative. As a result, NTD figures were excluded from this report.

Figure 3 presents the prevalence of low birth weight (LBW) across the twelve Latin American and Caribbean countries reviewed. Guatemala reported the highest prevalence at 14%, followed by Honduras at approximately 13%. Most countries – including Mexico, Nicaragua, Colombia, Ecuador, and Venezuela – had rates ranging between 9% and 11%. Bolivia and Brazil reported slightly lower rates, around 8–9%, while Argentina and Peru recorded values closer to 7%. Haiti showed the lowest prevalence, slightly above 5%; however, the most recent data available for the country dated back to 2016. As shown in **Figure 4**, LBW prevalence exceeded 10% in Mexico, Guatemala, Nicaragua, Colombia, and Ecuador – levels that are considered of medium public health concern.

Figure 3. Prevalence of Low Birth Weight in 2020, except for Haiti (2016)[26]

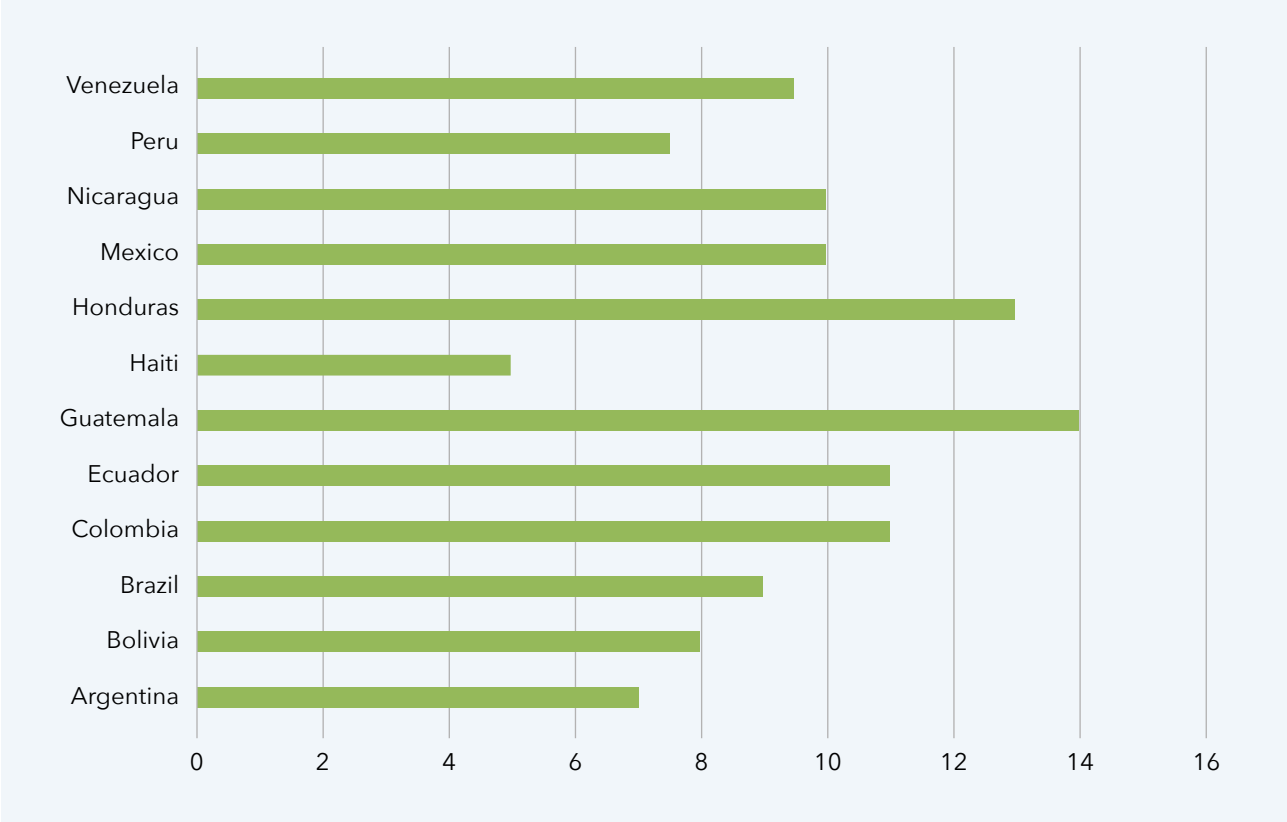


Figure 5 presents the prevalence of stunting (low height-for-age) among children aged 0–11 months across the twelve reviewed countries. Guatemala reported the highest prevalence, with approximately 34% of infants under one year stunted. This was followed by Ecuador (15.7%), Haiti (15.5%), Bolivia (12.9%), and Argentina and Brazil (both 11.0%). Honduras, Nicaragua, Mexico, and Peru reported slightly lower rates, ranging between 9% and 10%. Antenatal supplementation with multiple micronutrient supplements (MMS) has been associated with modest but meaningful reductions in child stunting, particularly when integrated into broader maternal nutrition strategies[27].

Figure 4. Public Health Relevance of Low-Birth-Weight Prevalence in LAC. Figure recreated from WHO Global Health Observatory[26]

Figure 5. Public Health Relevance of Stunting Prevalence in children 0–11 months old in LAC. Figure extracted from WHO Global Health Observatory[28]

PREVALENCE OF PRETERM BIRTHS

Preterm birth (defined as birth before 37 completed weeks of gestation) is a major global health concern and one of the leading risk factors for neonatal mortality and morbidity[29]. In 2020, the proportion of preterm births in LAC ranged from 5.8% to 12.8%. Countries such as Guatemala, Brazil, the Dominican Republic, and Suriname reported preterm birth rates comparable to those observed in Southern Asia, a region with some of the highest global prevalence of preterm births[29]. **Figure 6** presents global preterm birth rates in 2020, while **Figure 7** shows rates for selected LAC countries included in this landscape analysis.

Figure 6. Estimated national preterm births in 2020. Figure extracted from National, regional, and global estimates of preterm birth in 2020, with trends from 2010: a systematic analysis[29].

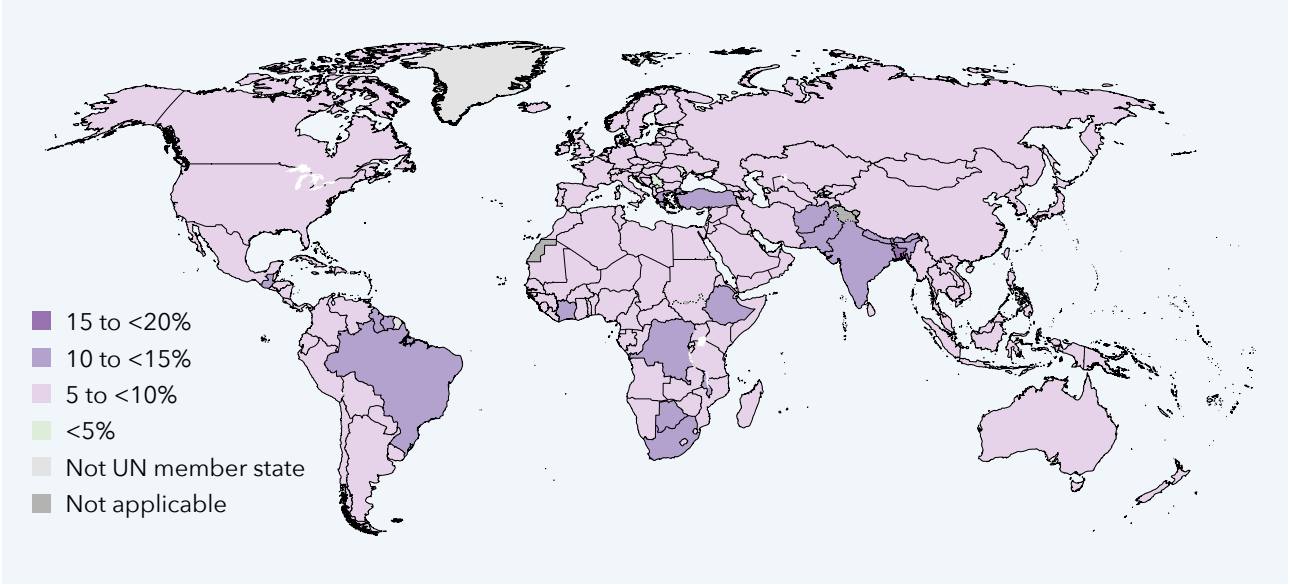
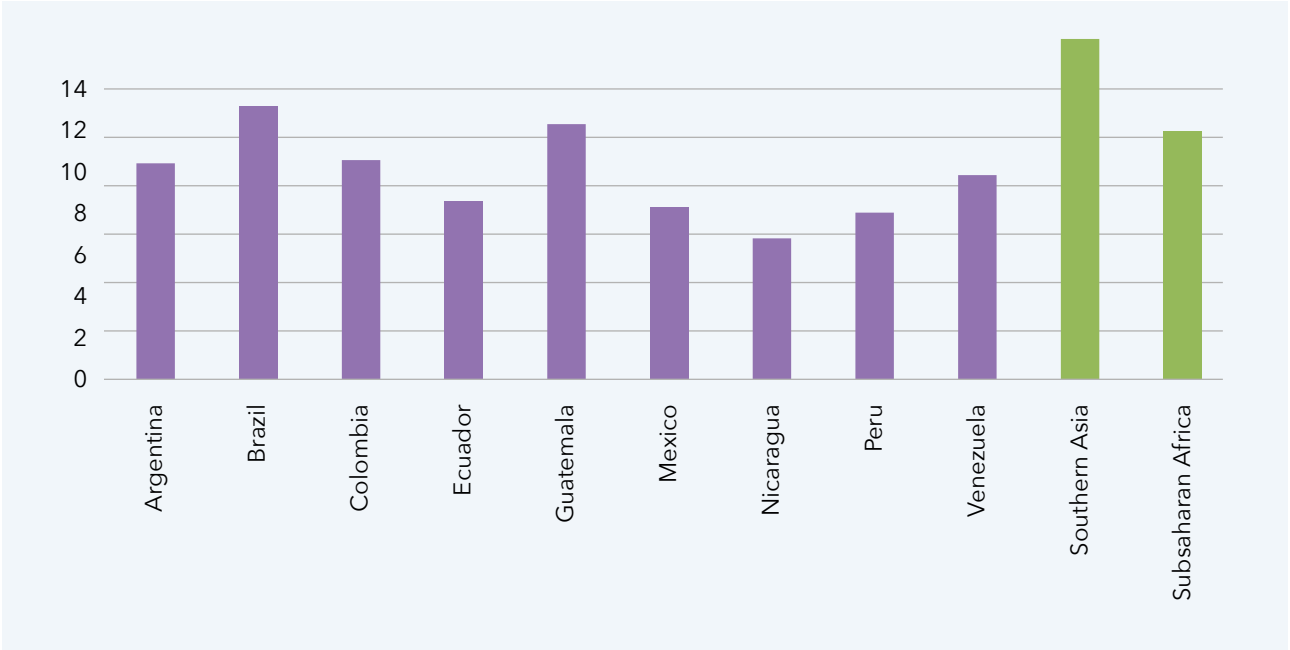


Figure 7. Prevalance of Preterm Births (%) in 2020 (29)



POLICIES AND GUIDING FRAMEWORK FOR ANTENATAL CARE

NATIONAL LEGISLATIONS FOR ANTENATAL CARE

Based on the initial screening, Argentina, Brazil, Bolivia, Colombia, Guatemala, Mexico, and Peru had national legislation that guarantees antenatal care (ANC) as a right for mothers and their children. Among these, Bolivia and Ecuador's legislations explicitly incorporated an intercultural perspective on ANC. For example, in Bolivia, Article 45-V of the Constitution established that women have the right to safe motherhood, with an intercultural perspective and practice[29].

ANTENATAL CARE GUIDELINES

The World Health Organization's 2016 recommendations on antenatal care (ANC) emphasized the importance of nutritional supplementation and increased contact frequency to enhance maternal and perinatal outcomes. The recommendations advocated for a minimum of eight ANC contacts during pregnancy, moving beyond the previously recommended four visits, to improve perinatal outcomes and ensure a positive pregnancy experience (30). In 2020, the guidelines were updated, and the recommendation for antenatal MMS supplementation was revised from "not recommended" to "recommended in the context of rigorous research" (31).

Countries often rely on international guidelines to inform the development of their ANC policies. All twelve countries reviewed had at least one national ANC guideline in place. Of these, eleven specified a minimum number of ANC visits deemed **adequate**; however, the recommended thresholds varied, ranging from three to six visits – all below the eight-contact minimum advised by WHO (**Table 2**). Haiti, with an ANC guideline published in 2009, recommended a minimum of three visits. Argentina, Brazil, Ecuador, Guatemala, Honduras, and Nicaragua recommended at least four visits; Mexico recommended a minimum of five; and Venezuela established the highest standard among the countries reviewed, with a minimum of six recommended ANC visits.

Timely ANC refers to early contact with healthcare providers during pregnancy, ideally within the first trimester. In line with WHO recommendations, most of the countries reviewed advised that the first ANC visit should take place within the first 12 weeks of gestation. Mexico stood out by recommending an even earlier initial contact – within the first eight weeks of pregnancy.

With respect to **antenatal supplementation**, none of the countries reviewed mentioned MMS or UNIMMAP MMS in their guidelines. Instead, the supplementation framework predominantly focused on iron and folic acid. Preventive supplementation with IFA was recommended in the national guidelines of Argentina, Colombia, Ecuador, Honduras, Mexico, Nicaragua, and Peru.

Ecuador and Nicaragua recommended higher doses of IFA for the treatment of maternal anemia. Brazil, Guatemala, and Venezuela recommended the use of iron alone for both the prevention and treatment of maternal anemia, while Bolivia recommended iron solely as a preventive measure. Preventive folic acid supplementation was included in the ANC guidelines of Bolivia, Brazil, Colombia, Guatemala, Honduras, Mexico, Nicaragua, and Venezuela. Preventive calcium supplementation was also recommended in the ANC guidelines of Colombia, Ecuador, Nicaragua, and Venezuela. In addition, calcium was recommended as a treatment for pre-eclampsia in several LAC countries. For detailed information on the dosage, frequency, and timing of antenatal supplementation for both prevention and treatment, see **Table 2**.

Table 2. Indicators of antenatal care control and antenatal supplementation included in the national guidelines

			Preventive ANC micronutrient supplementation				Micronutrient supplementation for the treatment of anemia during pregnancy		
	Adequate ANC	Timely ANC	Iron	IFA	Folic Acid	Other	Iron	IFA	Folic Acid
Argentina[32]	●	●	NM	Elemental Iron + Folic Acid	NM	NM	NM	NM	NM
Dose				60 mg + 0.4 mg					
Frequency				Daily					
Timing				NM					
Bolivia[29]		●	Ferrous Sulphate	NM	Folic Acid	NM	NM	NM	NM
Dose			NM		NM				
Frequency			Daily		NM				
Timing					NM				
Brazil[33]	●	●	Elemental iron	NM	Folic Acid	Calcium Carbonate (elemental calcium)	Ferrous sulfate (anemia)	NM	NM
Dose			40 mg		0.4 mg (all women) 0.4-0.5 mg (NTD risk history)	1.25 g (1g)	200 mg		0.4-0.5 mg
Frequency			Daily		Daily	Daily	NM		Daily
Timing			From beginning of pregnancy - 3rd m postpartum		30 d before attempting to conceive – 12 w gestation	Starting at the 12th week of gestation			30 d before attempting to conceive – 12 w gestation
Colombia[34]	●		NM	IFA	Folic Acid	Calcium	NM	NM	NM
Dose				30-60 mg + 0.4 mg	0.4 mg	1.2 g			
Frequency				Daily	Daily	Daily			
Timing				As soon as possible	Preconception -12 w gestation	From week 12th			
Ecuador[35]	●	●	NM	Elemental Iron + Folic Acid	Folic Acid	Calcium Carbonate	NM	Elemental iron + Folic Acid (anemia)	NM
Dose				60 mg + 0.4 mg	5 mg	1.5 – 2 g		120 mg and 0.4 mg	5 mg
Frequency				Daily	Daily	Daily		Daily	Daily
Timing				From 1st ANC visit	Preconception-1st trimester (women with NTD risk history)	NM		From diagnose – Hb reaches normal levels	Preconception-1st trimester

			Preventive ANC micronutrient supplementation				Micronutrient supplementation for the treatment of anemia during pregnancy		
	Adequate ANC	Timely ANC	Iron	IFA	Folic Acid	Other	Iron	IFA	Folic Acid
Guatemala[36]	●	●	Ferrous Sulphate		Folic Acid		Ferrous Sulphate (anemia)		Folic Acid (anemia)
Dose			2 tablets x 300 mg (2 x 60 mg of elemental iron)	NM	5 mg		300 mg		5 mg
Frequency			Every 8 d		Every 8 d		Daily		Daily
Timing			NM		NM		From diagnose – 3 m after		From diagnose – 3 m after
Haiti[37]	●	●	Guideline mentions pregnant women will receive iron, folic acid, vitamins, minerals, but not the dose, frequency and timing				In case of hemorrhage (dose NM)	NM	NM
Honduras[38]	●	●		Elemental Iron + folic Acid	Folic Acid		Elemental Iron (anemia)		NM
Dose				30–60 mg + 0.4 mg	1 mg (all women) 5 mg (women with NTD risk history)		120 mg		5 mg
Frequency			NM	Daily	Daily	NM	Daily	NM	Daily
Timing				During pregnancy	Prior pregnancy (all women) 3 m preconception – 1st trimester of pregnancy (women with NTD risk history)		From diagnose – Hb reaches normal levels		3 m preconception – 1st trimester of pregnancy
Mexico[39]	●	●	NM	IFA	Folic Acid				
Dose				NM	0.4 mg				
Frequency				NM	Daily	NM	NM	NM	NM
Timing				NM	From menarche or preconception				
Nicaragua[40]	●	●	NM	Elemental Iron + Folic Acid	Folic Acid	Calcium		Elemental Iron + Folic Acid (anemia – moderate/ severe)	NM
Dose				60 mg + 0.4 mg	4 mg (all women) 4-5 mg (women with NTD risk history)	1800 mg (3 tablets/day) for women at high risk of preeclampsia	NM	60-120 mg + 0.4 mg/ 120-200 mg + 0.4 mg	4-5 mg
Frequency				Daily	Daily	Daily		Daily	Daily
Timing				First ANC visit – end pregnancy	3 m prior pregnancy – 3 m after delivery	From week 12th gestation		From diagnosis – 6 m after	3 m prior pregnancy – 3 w after delivery

			Preventive ANC micronutrient supplementation				Micronutrient supplementation for the treatment of anemia during pregnancy		
	Adequate ANC	Timely ANC	Iron	IFA	Folic Acid	Other	Iron	IFA	Folic Acid
Peru[41, 42]	●	●		Elemental iron + Folic Acid	Folic Acid	Calcium Carbonate	Elemental iron (IDA/ID)		NM
Dose				60 mg + 0.4 mg (0.5 mg for pregnant adolescents) or 120 mg + 0.8 mg	0.8-1 mg (all women) 4 mg (women with NTD risk history)	1-2 g	100–200 mg/ 20–80 mg		4 mg
Frequency			NM	Daily	Daily	Daily	Daily	NM	Daily
Timing				Pregnant women starting ANC from week 14 or (pregnant women starting ANC from week 32)	Before pregnancy –13th w	NM	NM		Before pregnancy – 13th w
Venezuela[43]	●	●	Elemental Iron	NM	Folic Acid	Calcium	Elemental Iron (anemia)	NM	Folic Acid (megaloblastic anemia)
Dose			30 mg		0.4 mg	1 g (1.5 g pregnant adolescents)	100-120 mg		5 mg
Frequency			Daily		Daily	Daily	Daily (spread throughout the day)		Daily
Timing			From first ANC visit		All pregnancy	NM	NM		NM

Adequate ANC refers to the minimum number of antenatal care (ANC) visits recommended in national guidelines – typically four visits, in contrast to the World Health Organization's recommendation of at least eight. Timely ANC refers to initiation of care within the first trimester or within the first 8 weeks for Mexico.

● indicates that the indicator is explicitly mentioned in the national ANC guideline.

Abbreviations: m = months, w = weeks, d = days, Hb = haemoglobin, NM = not mentioned in the guidelines.

ESSENTIAL MEDICINES LIST (EML)

Essential medicines are those that satisfy the priority health care needs of a population. They are selected with due regard to disease prevalence and public health relevance, evidence of efficacy and safety and comparative cost-effectiveness. They are intended to always be available in functioning health systems, in appropriate dosage forms, of assured quality and at prices individuals and health systems can afford (44).

We reviewed the Essential Medicines Lists (EMLs) of the twelve countries of interest to assessed whether they include the supplements recommended by national and international antenatal care guidelines. All countries included iron in various forms and dosages, while folic acid was listed in eleven countries – Argentina was the exception. IFA supplements were included in the EMLs of Argentina, Bolivia, Ecuador, Haiti, Mexico, and Nicaragua. MMS appear in the EML of Nicaragua as "antenatal multivitamins and minerals," available in tablets or capsules packaged in blisters of 10, although the exact composition is not specified. UNIMMAP MMS was not mentioned in any of the EMLs reviewed.

Table 3. Supplements included in the Essential Medicines List (EML)

	Iron	Iron + Folic Acid	Folic Acid	MMS	UNIMMAP MMS
Argentina[45]	●	●			
Bolivia[46]	●	●	●		
Brazil[47]	●		●		
Colombia[48]	●		●		
Ecuador[49]	●	●	●		
Guatemala[50]	●		●		
Haiti[51]	●	●	●		
Honduras[52]	●		●		
Mexico[53]	●	●	●		
Nicaragua[54]	●	●	●	●	
Peru[55, 56]	●		●		
Venezuela[57]	●		●		

● indicates the supplemented is included in the EML.

EXISTING ANTENATAL CARE AND SUPPLEMENTATION COVERAGE

The proportion of pregnant women receiving adequate antenatal care (defined as four or more ANC visits) ranged from 66% in Haiti to 94% in Brazil. Data on timely ANC – defined as the first visit within the first trimester – was not available for all countries of interest. Among those with available data, 62% of pregnant women in Mexico received timely ANC, compared to 75% in Peru, 79% in Argentina, and 89% in Brazil (**Table 4**). **Figure 6** compares the proportion of women who accessed at least four ANC visits in seven LAC countries, disaggregated by education level, around 2017. Despite high overall coverage of adequate ANC in the region, significant gaps persisted among mothers with no formal education, highlighting inequalities in access to healthcare[23].

Data on antenatal supplementation coverage were not available for all countries included in the analysis. **Table 4** also presents the proportion of pregnant women who received iron alone, IFA, folic acid alone, or MMS. However, the table does not capture information on adherence to supplementation protocols.

Table 4. Proportion of Pregnant Women Meeting ANC Recommendations and Receiving ANC Supplementation

	Adequate ANC (%)	Timely ANC (%)	Iron (%)	IFA (%)	Folic Acid (%)	MMS (%)	UNIMMAP MMS (%)
Argentina	90.4[58]	79.0[59]	80.7[60]	83.6[60]	79.5[61]	–	–
Bolivia	81.3[62]	84.0[62]	78.0[62]	–	–	–	–
Brazil	94.0[15]	89.0[59]	–	–	–	–	–
Colombia	81.6[63]	–	94.8[64]	–	94.5[64]	–	–
Ecuador	83.3[58]	–	–	91.6[65]	–	–	–
Guatemala	86.2[66]	–	84.0[67]	–	82.6[67]	–	–
Haiti	66.0[58]	–	78.0[63]	–	–	–	–
Honduras	88.3[58]	–	59.0[63]	38.0[59]	–	–	–
Mexico	82.8[68]	62.6[68]	73.8[68]	79.5*[68]	90.2[68]	–	–
Nicaragua	91.9[69]	–	79.0[63]	29.0[59]	–	–	–
Peru	85.1[59]	75.0[59]	87.0[63]	–	–	–	–
Venezuela	85.2[58]	–	–	–	–	–	–

Adequate ANC: four or more ANC controls; Timely ANC: first control within the first trimester of gestation.
*The source mentions 79.5% of women received iron + other vitamins but is not clear if they mean IFA or MMS.

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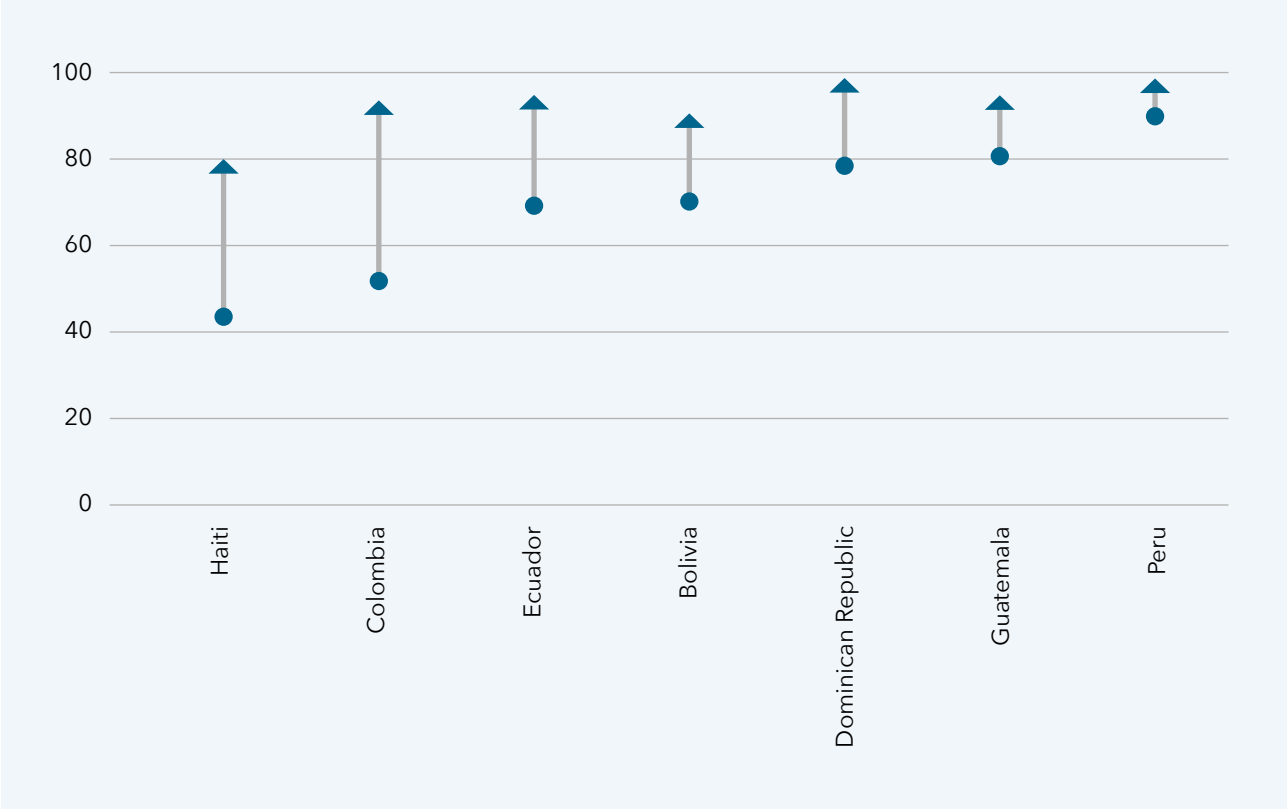
Figure 8. Percentage of women with access to at least four prenatal care visits, by level of maternal education (circle indicated no-education and triangle at least secondary education)[23]



ANTENATAL SUPPLEMENTATION IMPLEMENTATION EXPERIENCE IN LAC

Antenatal supplementation practices in LAC varied across the region. Among the twelve countries reviewed, none had incorporated MMS into their official ANC guidelines. However, several countries had prior or ongoing experience with MMS implementation. Mexico provided MMS to pregnant women nationwide between 2012 and 2018 and is currently evaluating its reintroduction through ongoing pilot initiatives using UNIMMAP MMS, donated by Vitamin Angels (VA). In Haiti, UNIMMAP MMS is distributed through partnerships led by VA, although it is not included in national guidelines or on the essential medicines list. In Venezuela, the Ministry of Health, with support from UNICEF, distributed MMS in selected vulnerable regions. Other countries – including Argentina, Colombia, Ecuador, Honduras, Nicaragua, and Peru – had a longer history of antenatal IFA supplementation. Bolivia's approach focused on the distribution of a fortified complementary food for pregnant women through the Ministry of Health.

The distribution of antenatal supplements recommended in the guidelines was provided free of charge through public healthcare centres. However, coverage varied significantly across the countries reviewed. For instance, while both Nicaragua and Ecuador recommend IFA antenatal supplementation, only 29% of pregnant women in Nicaragua received the supplements, whereas approximately 92% of pregnant women in Ecuador were covered. Notably, Guatemala deviated by recommending weekly rather than daily iron supplementation, with 84% of pregnant women receiving the supplements (**Table 4**). Regarding the monitoring of antenatal supplementation distribution, information was only available for Argentina, Brazil, Guatemala, and Mexico, all of which have health information systems. In Venezuela, data on supplementation distribution is only recorded at the regional level.

AVAILABILITY, DISTRIBUTION, AND COMPOSITION OF MULTIPLE MICRONUTRIENTS SUPPLEMENTATION IN LAC REGION

A situation analysis of the market, manufacturing, and policy factors that are driving the production of MMS in some lower- and upper- middle income countries showed that in the five Latin American countries surveyed – Brazil, Colombia, Guatemala, Mexico, and Peru – both locally produced and imported MMS were available in blister or bottle packaging, and can be purchased in pharmacies, supermarkets, or through e-commerce websites in Brazil and Colombia. In Guatemala, Mexico, and Peru, MMS was also available via direct selling or home delivery. However, MMS for pregnancy was not provided through government institutions in these countries, although in Guatemala, it can be accessed at antenatal care with a private doctor. A comparison of 20 MMS brands revealed that 35% were locally manufactured, and 65% fell into Category II, where at least 10 ingredients and dosages align with UNIMMAP, though some lacked significant amounts of certain vitamins and minerals. MMS in Colombia and Mexico also contained additional nutrients such as biotin, calcium, and DHA, offered at competitive prices, suggesting that manufacturers in these countries may provide affordable MMS that closely matches the UNIMMAP formulation (71).

Representatives from DSM-Firmenich indicated that they had developed MMS and other prenatal formulations with varying nutrient levels for private sector use. MMS was produced in Brazil under pharmaceutical standards but registered as a dietary supplement, making it exportable to countries like Colombia, Peru, Ecuador, Costa Rica, and Bolivia, which accepted such classifications. Countries like Mexico, Guatemala, and Argentina required vitamin medicine status due to regulatory constraints. Most current DSM-Firmenich activity on MMS production was focused on private sector demand, as public sectors in Latin America largely still included only IFA on essential medicines lists.

As well, VA partners informed that in 2024 they supported the implementation of UNIMMAP MMS across 13 countries in the region, in partnership with various organizations and institutions in each country. In total, 624,922 bottles of prenatal multivitamins were distributed benefiting 1,249,844 pregnant women and their babies through a network of 72 program partners. Some of the countries where VA supported with UNIMMAP MMS implementation were Belize, Cuba, Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Panama, and Peru.

EVIDENCE ON ACCEPTABILITY AND ADHERENCE TO DIFFERENT TYPES OF ANC SUPPLEMENTATION

Data on the existing evidence regarding the acceptability and adherence to ANC supplementation across LAC was limited or outdated. Across the region, there was a general trend where public health attention and efforts appear to have shifted towards addressing overweight, obesity, and non-communicable diseases.

Similar barriers and facilitators to adherence to ANC supplementation were identified across the profiled countries. Common barriers included gastrointestinal side effects in Bolivia, Guatemala, Haiti, Mexico, and Peru[72-75]. In Guatemala, Mexico, and Peru, women also expressed a dislike for the taste of the supplements[72, 74]. In Bolivia, Brazil, and Peru, mothers with lower levels of education held negative beliefs about supplementation, leading to lower adherence[76]. Conversely, family or partner support appeared to enhance adherence to antenatal supplementation in Haiti and Peru[72].

READINESS ASSESSMENT FOR MMS IMPLEMENTATION

SUMMARY AND RECOMMENDATIONS

None of the countries reviewed included MMS or UNIMMAP MMS in their ANC guidelines or essential medicines lists, although these supplements were available in the private market and in some cases, produced locally for example by DSM-Firmenich. In some of the countries reviewed VA also donated and/or supported the implementation of UNIMMAP MMS.

Mexico was currently piloting UNIMMAP MMS as part of antenatal care (ANC), with involvement from both government bodies and research institutions. In Haiti, UNIMMAP MMS has been implemented regionally, though it is not yet integrated into national policy; distribution efforts there were overseen by organizations such as VA. VA also supported the implementation of UNIMMAP MMS in collaboration with local partners across several countries, including Belize, Cuba, the Dominican Republic, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Panama, and Peru. In Venezuela, UNICEF facilitated regional MMS distribution, targeting specific populations. For other countries in the region, we did not find information regarding the use of MMS during pregnancy.

All the reviewed countries had established programs for distributing IFA, iron, or folic acid supplements, typically coordinated by the Ministry of Health or equivalent. However, a common bottleneck was that supply chain monitoring relied on paper records, which depended on the availability and willingness of healthcare workers. Additionally, the fragmentation between the public and private health sectors presented another challenge. In Guatemala, for example, while women received free iron and folic acid supplements through public health services, only 60% report taking them, and many did not follow the national supplementation schedule.

Countries with monitoring systems for the distribution of ANC supplements included Argentina, Brazil, Guatemala, and Mexico. In most cases, these systems were digitalized but not in real time. Guatemala and Mexico also regularly conducted national surveys to monitor health and nutrition outcomes. In contrast, while some surveys exist for the other profiled countries, most were outdated.

All countries reviewed had established delivery platforms for antenatal supplementation. Iron, folic acid, calcium, and/or IFA were included in their EMLs and were distributed through the public health sector. Additionally, antenatal supplements were produced locally or regionally. Each country also had the necessary infrastructure and logistics to store and distribute antenatal supplements. Therefore, the main challenge to introducing or scaling up MMS implementation for pregnant women is securing buy-in from decision-makers to include MMS in the ANC guidelines and EMLs.

In summary, based on their stage of MMS implementation, Haiti was in Phase 2: initial implementation supported by implementation research. Mexico and Venezuela were in Phase 1: the exploration phase focused on building an enabling environment for MMS. The remaining countries reviewed were rather in Phase 0, with information available on MMS but no active implementation or had no information available regarding MMS.

Table 5. Readiness Assessment Analysis

	Policies & Guidelines	Stakeholders Buy-In	Program Delivery Platform	Supply Chain	Monitoring & Data System
Argentina		N/A			
Bolivia					
Brazil					
Guatemala			N/A		
Haiti				N/A	N/A
Mexico					
Peru					
Venezuela				N/A	

N/A = Information not available.

■ = MMS is not included in national policies or guidelines, and there is no indication of stakeholder interest.

■ = No clear evidence of stakeholder interest in MMS; however, there may be existing delivery platforms or supply chains for other micronutrient supplements during pregnancy or monitoring and data systems for supplement distribution or health and nutrition outcomes exist but are not specific to MMS and/or are outdated.

■ = Stakeholders have expressed interest in or are actively involved in MMS implementation; or there is an existing delivery platform suitable for MMS; or the country has functional monitoring systems for supplement distribution and up-to-date monitoring of health and nutrition outcomes.

REFERENCES

1 Wiemers M, Hanano A, Ní Chéilleachair R, Vaughan A, Foley C, Mann H, Radtke K, Fritschel H. Global Hunger Index: how gender justice can advance climate resilience and zero hunger. 2024. Accessed April 2025 https://www.globalhungerindex.org/download/2024-download.html

2 World Health Organization. Prevalence of anemia in pregnant women. Global Health Observatory. Updated May 2025. Accessed May 2025. https://www.who.int/data/gho/data/themes/topics/anaemia_in_women_and_children

3 Gernand AD, Schulze KJ, Stewart CP, West KP Jr, Christian P. Micronutrient deficiencies in pregnancy worldwide: health effects and prevention. Nat Rev Endocrinol. 2016;12(5):274-289. doi:10.1038/nrendo.2016.37

4 World Health Organization. Guideline on haemoglobin cutoffs to define anemia in individuals and populations. 2024. Accessed May 2025. https://www.who.int/publications/i/item/9789240088542

5 Healthy Mothers Healthy Babies Consortium. Multiple micronutrient supplementation. Accessed May 2025. https://hmhb.micronutrientforum.org/mms/

6 United Nations Economic Commission for Latin America and the Caribbean. Demographic observatory of Latin America and the Caribbean 2024. 2024. Accessed May 2025. https://www.cepal.org/en/publications/81085-demographic-observatory-latin-america-and-caribbean-2024-population-prospects-and

7 Mujica OJ, Sanhueza A, Carvajal-Velez L, et al. Recent trends in maternal and child health inequalities in Latin America and the Caribbean. Int J Equity Health. 2023;22(1):125. doi:10.1186/s12939-023-01932-4

8 World Bank. Unleashing aspirations while ensuring opportunities could help reduce teenage pregnancy in Latin America and the Caribbean. 2024. Accessed May 2025. https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099062724112512851

9 Worldometer. Worldometer Statistics Database. Accessed April 2025. https://www.worldometers.info/

10 United Nations Development Programme. Human development report 2023/2024. 2024. Accessed April 2025. https://hdr.undp.org/system/files/documents/generic-image/hdr2023-24reportsp.pdf

11 United Nations Children's Fund (UNICEF). Countdown to 2030. Accessed April 2025. https://data.unicef.org/countdown-2030

12 Pan American Health Organization. Indicadores básicos Argentina 2023. 2023. Accessed April 2025. https://iris.paho.org/bitstream/handle/10665.2/59380/indicadores_basicos.pdf

13 World Health Organization. Bolivia country profile. Accessed April 2025. https://platform.who.int/docs/default-source/mca-documents/policy-documents/policy-survey-2018/country-profiles/policy-country-profile-2018-bolivia.pdf

14 Defensoría del Pueblo (Bolivia). Situación del embarazo adolescente. Published April 2025. Accessed April 2025. https://www.defensoria.gob.bo/noticias/defensoria-del-pueblo-insta-al-estado-a-reducir-acero%E2%80%9D-embarazos-en-adolescentes-menores-de-15-anyos-y-garantizar-el-acceso-a-servicios-e-informacion-en-salud-sexual-y-reproductiva

15 Brazilian Ministry of Health. Secretariat of Health Surveillance and Environment. Painel de monitoramento de nascidos vivos. Accessed April 2025. https://svs.aids.gov.br/daent/centrais-de-conteudos/paineis-de-monitoramento/natalidade/nascidos-vivos/

16 Countrymeters. Colombia population data. Accessed April 2025. https://countrymeters.info/es/Colombia

17 Instituto Nacional de Estadística y Censos (Ecuador). Registro estadístico de nacidos vivos y defunciones fetales. Accessed April 2025. https://www.ecuadorencifras.gob.ec/nacidos-vivos-y-defunciones-fetales/

18 United Nations International Children's Emergency Fund (UNICEF). #PodríaSerTuRealidad: matrimonio infantil y uniones tempranas forzadas. Accessed April 2025. https://www.unicef.org/guatemala/podriaserturealidad

19 Doctors Without Borders (Médecins Sans Frontières). Honduras: filling the gap of sexual and reproductive health care and education in the community. Published April 2025. Accessed April 2025. https://www.doctorswithoutborders.ca/honduras-filling-the-gap-of-sexual-and-reproductive-health-care-and-education-in-the-community/

20 Instituto Nacional de Estadística y Geografía (INEGI). Natalidad y fecundidad. Accessed April 2025. https://www.inegi.org.mx/temas/natalidad/

21 Ministry of Health (Peru). Plan nacional para la reducción y control de la anemia materno infantil y la desnutrición crónica infantil en el Perú, 2017–2021. 2017. Accessed April 2025. https://www.gob.pe/institucion/minsa/informes-publicaciones/280855-plan-nacional-para-la-reduccion-y-control-de-la-anemia-materno-infantil-y-la-desnutricion-cronica-infantil-en-el-peru-2017-2021-documento-tecnico

22 World Health Organization. Venezuela country profile. Accessed April 2025. https://platform.who.int/docs/default-source/mca-documents/policy-documents/policy-survey-2018/country-profiles/policy-country-profile-2018-venezuela.pdf

23 Marinho ML, Antía F, Arenas de Mesa A. Salud y desigualdad en América Latina y el Caribe: la centralidad de la salud para el desarrollo social inclusivo y sostenible. Políticas Sociales. 2023. Accessed April 2025. https://repositorio.cepal.org/server/api/core/bitstreams/b816a7eb-10d7-4f37-8eba-e6cb8feb91cc/content

24 Mejía-Rodríguez F, Mundo-Rosas V, García-Guerra A, et al. Prevalencia de anemia en la población mexicana: análisis de la Ensanut Continua 2022. Salud Publica Mex. 2023;65(suppl):S225-S230. doi:10.21149/14771

25 World Health Organization. Prevalence of anemia in women of reproductive age. Global Health Observatory. Accessed April 2025. https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-anaemia-in-women-of-reproductive-age-(-)?bookmarkId=1a82123a-9be6-409c-a8c1-5ed9c26f0d85

26 World Health Organization. Low birth weight prevalence. Global Health Observatory. Accessed April 2025. https://www.who.int/data/gho/data/indicators/indicator-details/GHO/low-birth-weight-prevalence-(-)

27 Gomes F, Adu-Afarwuah S, Agustina R, et al. Effect of prenatal multiple micronutrient supplementation compared with iron and folic acid supplementation on size at birth and subsequent growth through 24 months of age: a systematic review and meta-analysis. Am J Clin Nutr. Published online April 28, 2025. doi:10.1016/j.ajcnut.2025.04.022

28 World Health Organization. Stunting prevalence among children aged under 5 years. Global Health Observatory. Accessed April 2025. https://www.who.int/data/gho/data/indicators/indicator-details/GHO/gho-jme-stunting-prevalence

29 Ohuma EO, Moller A-B, Bradley E, et al. National, regional, and global estimates of preterm birth in 2020, with trends from 2010: a systematic analysis. Lancet. 2023;402(10409):1261-1271. doi:10.1016/S0140-6736(23)00878-4

30 Ministry of Health and Sports (Bolivia). Guía de atención materna y neonatal con enfoque intercultural. 2024. Accessed April 2025. https://www.minsalud.gob.bo/component/jdownloads/?task=download.send&id=836:guia-de-atencion-materna-y-neonatal-con-enfoque-intercultural&catid=35&Itemid=612

31. World Health Organization. WHO recommendations on antenatal care for a positive pregnancy experience: summary. 2018. Accessed April 2025. https://iris.who.int/bitstream/handle/10665/259947/WHO-RHR-18.02-eng.pdf

32 World Health Organization. WHO antenatal care recommendations for a positive pregnancy experience: nutritional interventions update–multiple micronutrient supplements during pregnancy. 2020. Accessed April 2025. https://iris.who.int/bitstream/handle/10665/333561/9789240007789-eng.pdf

33 Ministry of Health (Argentina). Guía de práctica clínica: atención prenatal de bajo riesgo. 2023. Accessed April 2025. https://copba-cs.org.ar/guia-de-practica-clinica-atencion-prenatal-de-bajo-riesgo/

34 Ministry of Health (Brazil). Secretariat of Health Care. Guia do pré-natal e puerpério na atenção primária à saúde. 2024. Accessed April 2025. https://atencaoprimaria.rs.gov.br/upload/arquivos/202404/25124004-guia-do-pre-natal-2024.pdf

35 Ministry of Social Protection (Colombia). Lineamiento técnico y operativo de la ruta integral de atención en salud materno perinatal. 2018. Accessed April 2025. https://b30c6441-f98b-4465-8dfe-512406ea9cf3.filesusr.com/ugd/4583a1_56d4a72424ba457baa4bb6b613beee4b.pdf?index=true

36 Ministry of Public Health (Ecuador). Alimentación y nutrición de la mujer gestante y de la madre en periodo de lactancia: guía de práctica clínica. 2014. Accessed April 2025. https://www.salud.gob.ec/wp-content/uploads/2018/03/Alimentacion_y_nutricion_de_la_mujer_gestante_y_la_madre_en_periodo_de_lactancia.pdf

37 Ministry of Public Health and Social Assistance (Guatemala). Guía para la implementación de la atención integrada materna y neonatal calificada con enfoque de género y pertinencia cultural en los servicios institucionales de atención del parto. 2011. Accessed April 2025. https://guatemala.unfpa.org/sites/default/files/pub-pdf/GUIA%20MATERNO%20NEONATAL%202011%20PDF.pdf

38 Ministère de la Santé Publique et de la Population (Haiti). Manuel de normes en planification familiale et en soins maternels. 2009. Accessed April 2025. https://mspp.gouv.ht/site/downloads/Manuel%20de%20Normes%20en%20Planification%20Familiale%20et%20en%20Soins%20Maternels%20MSPP%202009.pdf

39 Ministry of Public Health (Honduras). Protocolo para la atención integral en salud materna: atención preconcepcional, prenatal, parto, puerperio y complicaciones obstétricas. 2024. Accessed April 2025. https://honduras.bvsalud.org/wp-content/uploads/2025/01/Protocolo-para-la-Atencion-Integral-en-Salud-Materna.pdf

40 Ministry of Health (Mexico). Norma Oficial Mexicana NOM-007-SSA2-2016, para la atención de la mujer durante el embarazo, parto y puerperio, y de la persona recién nacida. 2016. Accessed April 2025. https://www.dof.gob.mx/nota_detalle.php?codigo=5432289&fecha=07/04/2016#gsc.tab=0

41 Ministry of Health (Nicaragua). Normas y protocolos para la atención prenatal, parto, recién nacido y puerperio. 2015. Accessed April 2025. https://platform.who.int/docs/default-source/mca-documents/policy-documents/guideline/NIC-CC-10-026-GUIDELINE-2015-esp-Norma-011-SEGUNDA-EDICION-APN.pdf

42 Ministry of Health (Peru). Norma técnica de salud para la atención integral y diferenciada de la gestante adolescente durante el embarazo, parto y puerperio. 2017. Accessed April 2025. https://docs.bvsalud.org/biblioref/2019/04/964541/rm_007-2017-minsa.pdf

43 Ministry of Health (Peru). Guías de práctica clínica y de procedimientos en obstetricia y perinatología. 2023. Accessed April 2025. https://www.gob.pe/institucion/inmp/informes-publicaciones/4624238-guias-de-practica-clinica-y-de-procedimientos-en-obstetricia-y-perinatologia-2023

44 Ministry of Popular Power for Health (Venezuela). Protocolos de atención: cuidados prenatales y atención obstétrica de emergencia. 2013. Accessed April 2025. https://venezuela.unfpa.org/sites/default/files/pub-pdf/Protocolo%20Atencion%20Obstetrica.pdf

45. World Health Organization. Model list of essential medicines: 22nd list. 2021. Accessed April 2025. https://iris.who.int/bitstream/handle/10665/345533/WHO-MHP-HPS-EML-2021.02-eng.pdf

46 Ministry of Health (Argentina). Primer encuentro para el consejo del listado de medicamentos esenciales para el primer nivel de atención. 2010. Accessed April 2025. https://www.argentina.gob.ar/sites/default/files/bancos/2020-11/Anexo-8_Medicamentos-esenciales-Remediar.pdf

47 Ministry of Health (Bolivia). Lista nacional de medicamentos esenciales LINAME 2022-2024. 2022. https://www.agemed.gob.bo/archivos_snus/LINAME_2022_2024.pdf

48 Ministry of Health (Brazil). Relação nacional de medicamentos essenciais. 2024. https://www.gov.br/saude/pt-br/composicao/sectics/rename

49 Ministry of Health and Social Protection (Colombia). Resolución número 005521 Plan Obligatorio de Salud (POS). 2014. https://www.minsalud.gov.co/Normatividad_Nuevo/Resoluci%C3%B3n%205521%20de%202013.PDF

50 Ministry of Health (Ecuador). Cuadro nacional de medicamentos básicos y registro terapéutico. 2014. https://www.salud.gob.ec/cuadro-nacional-de-medicamentos-basico-cnmb/

51 Ministry of Public Health (Guatemala). Lista básica de medicamentos esenciales. 2019. http://bvs.gt/eblueinfo/AII/AII_035.pdf

52 Ministère de la Santé (Haiti). Liste nationale des médicaments essentiels. 2020. https://mspp.gouv.ht/site/downloads/Liste%20Nationale%20des%20M%C3%A9dicaments%20Essentiels%202e%20%C3%A9dition_publication%202022%20(1).pdf

53 Ministry of Health (Honduras). Listado de medicamentos esenciales. 2023. https://honduras.bvsalud.org/wp-content/uploads/2024/04/Listado-Nacional-de-Medicamentos-Esenciales.pdf

54 Institute of Health for Welfare (Mexico). Listado actualizado de medicamentos de referencia. 2025. https://www.gob.mx/cms/uploads/attachment/file/995791/LMR_2025-01_Abril_2025.pdf

55 Ministry of Health (Nicaragua). Lista básica de medicamentos esenciales. 2022. https://www.minsa.gob.ni/sites/default/files/publicaciones/LISTA%20B%C3%81SICA%20DE%20MEDICAMENTOS%20ESENCIALES-2022.pdf

56 Ministry of Health (Peru). Listado de medicamentos esenciales genéricos en denominación común internacional. 2024. https://www.digemid.minsa.gob.pe/webDigemid/acceso-y-uso/listado-de-medicamentos-esenciales-genericos/

57 Comision subregional de política de acceso a los medicamentos (Republica Bolivariana de Venezuela). Listado de medicamentos esenciales. 2021. https://www.orasconhu.org/documentos/Listado%20de%20Medicamentos%20Esenciales%20Venezuela%20FINAL.pdf

58 World Health Organization. The Global Health Observatory: antenatal care coverage—at least four visits (%). April 2025. Accessed April 2025. https://www.who.int/data/gho/data/indicators/indicator-details/GHO/antenatal-care-coverage-at-least-four-visits

59 United Nations International Children's Emergency Fund (UNICEF). Countdown to 2030: the Countdown Profiles—a tool for action. Accessed April 2025. https://data.unicef.org/countdown-2030/

60 Centro de Estudios de la Salud Nutricional Infantil (CESNI). Matriz de intervenciones en 1000 días: revisión y actualización. 2024. Accessed April 2025. Matriz de intervenciones en 1000 días – Revisión y actualización – Biblioteca Cesni

61 Ministry of Health (Argentina). Recomendaciones para la práctica del control preconcepcional, prenatal y puerperal. 2013. Accessed April 2025. https://salud.neuquen.gob.ar/wp-content/uploads/2024/08/Ministerio-Salud-Neuquen_Salud-de-la-embarazada-Control-prenatal.pdf

62 Ministry of Sports and Youth (Bolivia). Plan estratégico institucional 2021-2025. 2022. Accessed April 2025. https://extranet.who.int/ncdccs/Data/BOL_B3_S23_PEI-Plan%20Estrat%C3%A9gico%20Institucional%202021-2025.pdf

63 Global Nutrition Report. The burden of malnutrition at a glance. April 2025. Accessed April 2025. https://globalnutritionreport.org/resources/nutrition-profiles/latin-america-and-caribbean/

64 Ministry of Health and Social Protection (Colombia). Encuesta nacional de demografía y salud 2015. 2015. https://www.dhsprogram.com/pubs/pdf/FR334/FR334.pdf

65 National Institute of Statistics and Census (Ecuador). Encuesta nacional sobre desnutrición infantil 2022-2023. 2023. Accessed April 2025. https://www.ecuadorencifras.gob.ec/documentos/web-inec/ENDI/Boletin_tecnico_%20ENDI_R1.pdf

66 Instituto de Nutrición de Centro América y Panamá (INCAP). Informe del sistema de vigilancia epidemiológica de salud y nutrición (SIVESNU) agosto 2018–abril 2019: módulo 3, salud y nutrición de la mujer. 2020. Accessed April 2025. https://portal.siinsan.gob.gt/wp-content/uploads/SIVESNU-2018-MODULO-3-PARA-SESAN-2020.pdf

67 Instituto de Nutrición de Centro América y Panamá (INCAP). Sistema de vigilancia epidemiológica de salud y nutrición (SIVESNU) 2015: informe final. 2018. Accessed April 2025. https://portal.siinsan.gob.gt/wp-content/uploads/SIVESNU-2015-COMPLETO-PARA-SESAN-2020-1.pdf

68 Unar-Munguía M, Bonvecchio Arenas A, Vázquez-Salas RA. Acceso a servicios de salud prenatal y para primera infancia. Salud Publica Mex. 2023. doi:10.21149/14796

69 Pan American Health Organization. Salud en las Américas+. April 2025. Accessed April 2025. https://hia.paho.org/es/perfiles-de-pais

70 Landaeta-Jiménez M, Ramírez G, Vásquez M. Encuesta Nacional de Condiciones de Vida Venezuela ENCOVI 2017. 2017. Accessed April 2025. https://www.proyectoencovi.com/encovi-2017

71 Monterrosa EC, Beesabathuni K, van Zutphen KG, et al. Situation analysis of procurement and production of multiple micronutrient supplements in 12 lower and upper middle-income countries. Matern Child Nutr. 2018;14(S5):e12500. doi:10.1111/mcn.12500

72 Shaw A, Golding L, Girard AW. Alternative approaches to decreasing maternal anemia: identifying the need for social marketing strategies to promote iron-folic acid supplementation in the Peruvian highlands. Int J Nonprofit Volunt Sect Mark. 2012;17(4):325-333. doi:10.1002/nvsm.1438

73 Merino Almaraz VN, Lozano Beltrán DF, Torrico F. Factores que influyen la adherencia a la suplementación con sulfato ferroso durante el embarazo. Gac Med Bol. 2010;33:21-25. https://www.gacetamedicaboliviana.com/index.php/gmb/article/view/458

74 Secretaría de Seguridad Alimentaria y Nutricional. Informe de Monitoreo Integrado de la Seguridad Alimentaria y Nutricional. 2019. Accessed May 2025. https://portal.siinsan.gob.gt/wp-content/uploads/INFORME_MONISAN-versio%CC%81n-19septiembre2019.pdf

76 Sight and Life. Focusing on multiple micronutrient supplements in pregnancy. Accessed May 2025. https://cms.sightandlife.org/wp-content/uploads/2023/03/Focusing-on-Multiple-Micronutrient-Supplements-Pregnancy-sightandlife.pdf#page=54

77 Caballero-Apaza LM, Vidal-Espinoza R, Padilla-Caceres T, Cossio-Bolaños M, Gomez-Campos R. Creencias sobre la adherencia al tratamiento por suplemento de hierro en madres de niños con anemia que viven en una región de altitud del Perú: creencias sobre la adherencia al tratamiento de hierro. Nutr Clin Diet Hosp. 2022;42(2). doi:10.12873/422caballero

FIGURES

Figure 1:

23. Marinho ML, Antía F, Arenas de Mesa A. Salud y desigualdad en América Latina y el Caribe: la centralidad de la salud para el desarrollo social inclusivo y sostenible. Políticas Sociales. 2023. Accessed April 2025. https://repositorio.cepal.org/server/api/core/bitstreams/b816a7eb-10d7-4f37-8eba-e6cb8feb91cc/content

Figure 2:

24 Mejía-Rodríguez F, Mundo-Rosas V, García-Guerra A, et al. Prevalencia de anemia en la población mexicana: análisis de la Ensanut Continua 2022. Salud Publica Mex. 2023;65(suppl):S225-S230. doi:10.21149/14771,

25 World Health Organization. Prevalence of anemia in women of reproductive age. Global Health Observatory. Accessed April 2025. https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-anaemia-in-women-of-reproductive-age-(-)?bookmarkId=1a82123a-9be6-409c-a8c1-5ed9c26f0d85

2 World Health Organization. Prevalence of anemia in pregnant women. Global Health Observatory. Updated May 2025. Accessed May 2025. https://www.who.int/data/gho/data/themes/topics/anaemia_in_women_and_children

Figure 3:

26 World Health Organization. Low birth weight prevalence. Global Health Observatory. Accessed April 2025. . https://www.who.int/data/gho/data/indicators/indicator-details/GHO/low-birth-weight-prevalence-(-)

Figure 4:

26 World Health Organization. Low birth weight prevalence. Global Health Observatory. Accessed April 2025. . https://www.who.int/data/gho/data/indicators/indicator-details/GHO/low-birth-weight-prevalence-(-)

Figure 5:

28 World Health Organization. Stunting prevalence among children aged under 5 years. Global Health Observatory. Accessed April 2025. https://www.who.int/data/gho/data/indicators/indicator-details/GHO/gho-jme-stunting-prevalence

Figure 6:

29 Ohuma EO, Moller A-B, Bradley E, et al. National, regional, and global estimates of preterm birth in 2020, with trends from 2010: a systematic analysis. Lancet. 2023;402(10409):1261-1271. doi:10.1016/S0140-6736(23)00878-4

Figure 7:

29 Ohuma EO, Moller A-B, Bradley E, et al. National, regional, and global estimates of preterm birth in 2020, with trends from 2010: a systematic analysis. Lancet. 2023;402(10409):1261-1271. doi:10.1016/S0140-6736(23)00878-4

Figure 8:

23 Marinho ML, Antía F, Arenas de Mesa A. Salud y desigualdad en América Latina y el Caribe: la centralidad de la salud para el desarrollo social inclusivo y sostenible. Políticas Sociales. 2023. Accessed April 2025. https://repositorio.cepal.org/server/api/core/bitstreams/b816a7eb-10d7-4f37-8eba-e6cb8feb91cc/content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ABOUT HMHB

The Healthy Mothers Healthy Babies Consortium (**HMHB**), hosted by the **Micronutrient Forum**, is the central platform for evidence, knowledge, collaboration, and advocacy in maternal nutrition. HMHB accelerates progress by fostering collective action on critical priority interventions such as multiple micronutrient supplementation (MMS) and balanced energy and protein (BEP) dietary supplementation, proven strategies to improve maternal and newborn health outcomes, particularly in low- and middleincome countries (LMICs). Comprising over 450 individuals and organizations, HMHB also hosts Technical Advisory Groups (TAGs) on **MMS** and **BEP**, bringing together experts in nutrition, maternal health, and public health to interpret evidence, identify knowledge gaps, and provide guidance to governments, NGOs, and partners.

Visit our website for the latest knowledge, evidence, guidance, and tools on maternal nutrition. Explore the World Map of Activities, Knowledge Hub, Advocacy Resource Center, Women's Voices short films, and Knowledge Byte videos. Join us in powering women's nutrition for promising futures. Become a member.

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