

Report of the Technical Meeting on the Diets and Eating Practices of Adolescent Girls and Women of Reproductive Age

March 16, 2015 — March 17, 2015



DISCLAIMER

This report is made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the terms of the Cooperative Agreement AID-OAA-A-11-00031 (SPRING), managed by JSI Research & Training Institute, Inc. (JSI). The contents are the responsibility of JSI, and do not necessarily reflect the views of USAID or the United States Government.

ABOUT SPRING

The Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) project is a five-year USAID-funded Cooperative Agreement to strengthen global and country efforts to scale up high-impact nutrition practices and policies and improve maternal and child nutrition outcomes. The project is managed by JSI Research & Training Institute, Inc., with partners Helen Keller International, The Manoff Group, Save the Children, and the International Food Policy Research Institute.

SPRING

JSI Research & Training Institute, Inc.

1616 Fort Myer Drive, 16th Floor

Arlington, VA 22209 USA

Phone: 703-528-7474

Fax: 703-528-7480

Email: info@spring-nutrition.org

Internet: www.spring-nutrition.org

COVER PHOTOS: SPRING and PAHO/WHO

CONTENTS

ACRONYMS..... **v**

INTRODUCTION AND BACKGROUND **1**

SUMMARY OF MEETING SESSIONS **3**

 OVERVIEW OF THE PROCESS FOR DEVELOPMENT OF THE GUIDING PRINCIPLES, WHO GUIDELINES, AND
 FOOD-BASED DIETARY GUIDELINES 3

 THE LANDSCAPE OF THE NUTRITIONAL STATUS OF ADOLESCENT GIRLS AND WRA 4

 GOALS FOR IMPROVING THE NUTRITIONAL STATUS OF ADOLESCENT GIRLS AND WRA 7

 PROGRAMMATIC EXPERIENCES AND PLATFORMS FOR PROMOTING KEY DIET AND EATING PRACTICES 10

 DISCUSSION AND CONCLUSIONS OF MEETING PARTICIPANTS 12

PROPOSED NEXT STEPS..... **15**

REFERENCES..... **17**

ANNEX 1: PARTICIPANT LIST **21**

 TECHNICAL MEETING ON THE DIET AND EATING PRACTICES OF ADOLESCENT GIRLS AND WOMEN OF
 REPRODUCTIVE AGE 21

ANNEX 2: MEETING AGENDA..... **25**

ACRONYMS

BMI	body mass index
DGAC	Dietary Guidelines Advisory Committee
DGAs	Dietary Guidelines for Americans
FANTA	Food and nutrition Technical Assistance III project
FBDG	food-based dietary guidelines
IDA	iron deficiency anemia
IFA	iron-folic acid
IOM	Institute of Medicine
JSI	JSI Research & Training Institute, Inc.
LAC	Latin American and Caribbean
LBW	low birth weight
LMIC	low- and middle-income countries
LMIC	lower middle-income countries
PAHO	Pan American Health Organization
PICO	population, intervention, comparison, and outcome
RCT	randomized controlled trials
SGA	small for gestational age
SPRING	Strengthening Partnerships, Results, and Innovations in Nutrition Globally project
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
VAD	vitamin A deficiency
WHO	World Health Organization
WIC	Supplemental Nutrition Program for Women, Infants, and Children
WRA	women of reproductive age

INTRODUCTION AND BACKGROUND

Interest in women’s nutrition before, during, and after pregnancy has been rekindled to improve maternal health and ensure optimal fetal growth and development (Black et al., 2013). Similarly, attention to adolescent girls—their dietary practices and nutritional status—is rising, placing them with mothers and other women of reproductive age (WRA) at the center of nutrition interventions within a lifecycle approach (Bhutta et al., 2013).

The 2013 Lancet Series on Maternal and Child Nutrition provided new evidence on the importance of the nutrition of women at the time of conception and during pregnancy, not only to ensure optimal fetal growth and development but also for the health of the mother (Black et al., 2013). Global estimates show that fetal growth restriction, resulting from poor maternal nutrition during pregnancy, including anemia and micronutrient deficiencies, is the cause of more than 200,000 neonatal deaths and 20 percent of stunting in children less than 5 years of age (Black et al., 2013). Dietary deficiencies of iron and calcium, the two most important nutritional causes of maternal mortality, contribute to 23 and 19 percent of maternal deaths, respectively (Black et al., 2013).

At the same time, maternal overweight and obesity, which are increasing global problems, are associated with maternal morbidity, preterm birth, and increased infant mortality (Bateman et al., 2012; Leddy et al., 2008; Chen et al., 2009; Johansson et al., 2014). Overweight and obese women often suffer from the same micronutrient deficiencies as those who are undernourished. Overweight and obese women also face increased risk of poor breastfeeding outcomes. Obesity during pregnancy can also affect health later in life for both mother and child, increasing the risks of heart disease and hypertension among women, and obesity, diabetes, and heart disease among children (Leddy et al., 2008).

USAID’s Multi-Sectoral Nutrition Strategy 2014-2025 emphasizes that adequate nutritional status during pregnancy and lactation is fundamental to maternal and child health and survival (USAID, 2014). The strategy commits to “working across priorities to ensure that safe and nutritious foods are accessible, healthy dietary practices are followed, and the prevention and treatment of infectious diseases are prioritized” (USAID, 2014). Additionally, the strategy stresses the importance of reducing malnutrition among WRA, particularly during the 1,000-day window (USAID, 2014). PAHO’s Plan of Action for the Prevention of Obesity in Children and Adolescents highlights the need to reduce obesity among adolescents to prevent noncommunicable diseases (PAHO, 2014).

Despite the importance of nutrition for adolescent girls and WRAs, this population is virtually ignored in nutrition programming, with the exception of iron and folic acid supplement provision during pregnancy. More than 15 years ago, the development of guiding principles for complementary feeding of the breastfed child (PAHO/WHO, 2003) and for feeding non-breastfed children 6-24 months of age (WHO, 2005) established a basis for improved young child nutrition programming. The development of a set of recommendations for key diet and eating practices could similarly motivate expanded nutrition programming and research for adolescent girls and WRA.¹



¹ WHO defines the period of adolescence as 10 to 19 years, and WRA as 15 to 49 years of age.

As the first step in a process to develop these recommendations, the Pan American Health Organization (PAHO)/WHO, the United States Agency for International Development (USAID), and the two USAID global nutrition projects—Strengthening Partnerships, Results and Innovations in Nutrition Globally (SPRING) and the Food and Nutrition Technical Assistance III Project (FANTA)—co-hosted a technical meeting on March 16-17, 2015 at PAHO headquarters in Washington, D.C.

In preparation for the meeting, SPRING [commissioned two discussion papers](#): a landscape analysis of the nutritional status and nutrient intake of adolescent girls and WRA in low- and middle-income countries (LMIC); and findings from a review of programs implemented between 2004–2014 to improve the diet and eating practices of adolescent girls and WRA in LMIC.

The objectives of the meeting were to:

- Review insights and lessons from the two discussion papers on the nutrition of adolescent girls and WRA.
- Identify characteristics and issues related to key diet and eating practices for strengthening policies and programs.
- Propose next steps in the development of a set of recommendations for key diet and eating practices.

More than 40 global leaders in the field of adolescent and women’s nutrition, including academic and program experts representing a variety of governmental, nongovernmental, research, and donor institutions, participated in the meeting (Annex 1). Participants reviewed insight and lessons from the two discussion papers and identified key characteristics and issues related to recommended diet and eating practices for adolescent girls and WRA.

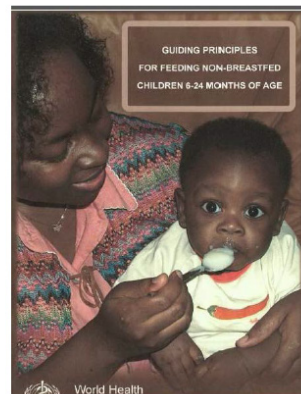
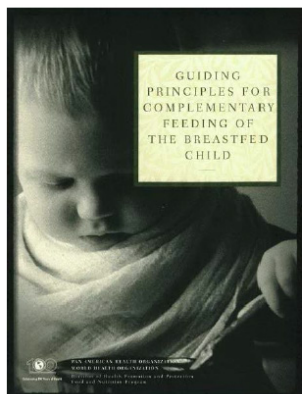
The meeting agenda (Annex 2) was organized into five main topic areas: 1) an overview of the different processes that have been used to develop guiding principles and guidelines related to dietary practices; 2) a landscape analysis of the nutritional status and practices of adolescent girls and WRA in LMIC; 3) goals for improving the nutrition of adolescent girls and WRA; 4) program experiences and platforms for promoting key diet and eating practices among adolescent girls and WRA; and 5) a discussion on key diet and eating practices for adolescent girls and WRA.

This report summarizes the content of the meeting, highlighting key points from both the presentations and discussions.

SUMMARY OF MEETING SESSIONS

OVERVIEW OF THE PROCESS FOR DEVELOPMENT OF THE GUIDING PRINCIPLES, WHO GUIDELINES, AND FOOD-BASED DIETARY GUIDELINES

An overview of the different methods that have been used for the development of dietary guidelines was presented in the first session of the meeting. This included the method used to develop the principles for the feeding of children 6-24 months; the method that WHO has established to develop guidelines; and methods that have been used for the development of national food-based dietary guidelines (FBDG). This overview was intended to inform discussion on the second day about which method would be most appropriate for developing recommendations for key diet and practices for adolescent girls and WRA, and which method would be most appropriate for the development and formalization of those recommendations.



This guiding months; develop for the to which eating which

Dr. Chessa Lutter of PAHO described the method used to develop the Guiding Principles for Complementary Feeding of the Breastfed Child. The goal was to develop a set of unified, scientifically based guidelines that could be adapted to local feeding practices and conditions. Development of these principles was greatly facilitated by the fact that the scientific basis had been published by WHO/UNICEF for nine of the ten principles (WHO/UNICEF, 1998). As a result, the method that was followed for the development was relatively simple and straightforward. The guiding principles for child feeding were drafted by Dr. Kathryn Dewey and requested and coordinated by PAHO. Thereafter, a WHO Global Consultation for Complementary Feeding in December 2001 was an opportunity to review the draft document, which was then revised and presented at the WHO Informal Meeting on Indicators for Complementary Feeding in December 2002 and discussed on various listserves before finalization in 2003.

Dr. Ludovic Reveiz of PAHO described the standardized method WHO uses to ensure that its guideline development process is systematized and transparent and that resulting guidelines meet the highest quality standards for evidence-based information. This involves the assessment, review, and grading of all relevant scientific evidence (WHO 2012). The guideline development process includes multiple stages of evidence and recommendations review and can take a year or more to complete.

Dr. Megan Deitchler then moderated a panel on FBDG for adolescent girls and WRA that featured Dr. Rafael Pérez-Escamilla, Ms. Mary Arimond, and Dr. Ruben Grajeda.

Dr. Pérez-Escamilla, who sat on the 2015 U.S. Dietary Guidelines Advisory Committee (DGAC), described the process of updating the U.S. Dietary Guidelines, which are mandated by law to be reviewed and revised every five years. The most recent DGAC report was submitted in February 2015 to the Secretaries of Health and Agriculture (USDA, 2015) for the development of the 2015 Dietary Guidelines for Americans (DGAs) policy report. The DGAs are the foundation of federal nutrition policy strongly impacting key maternal-child and youth nutrition programs including the Supplemental Nutrition Program for Women, Infants, and Children (WIC); child care centers and school nutrition feeding and education programs; SNAP (formerly known as the food stamps program); and food

labeling. Dr. Pérez-Escamilla explained that an advisory committee formed through public nomination leads the process to review and revise the U.S. Dietary Guidelines. The method used for the most recent U.S. Dietary Guideline revision involved selecting key population, intervention, comparison, and outcome (PICO) questions that were answered through systematic reviews conducted by the Nutrition Evidence Library (hosted by USDA), reviews of existing reviews and reports, and dietary patterns modeling. Although randomized controlled trials (RCT) were the preferred source of evidence to answer the research questions, when not available, quasi-experimental and observational studies were used as a source of evidence. Once several options of dietary patterns were identified, dietary patterns modeling was used to ensure that they met the nutrient intakes recommended by the Institute of Medicine (IOM).

Ms. Arimond of the University of California-Davis described the FBDG summary project that she is co-leading with Dr. Jennifer Coates of Tufts University and Dr. Anna Herforth (independent). The purpose of this project is to synthesize the key messages and recommendations emanating from the 100+ existing dietary guidelines that the Food and Agricultural Organization has collected, and review how they compare to recommendations from WHO and others. The review is intended to contribute to the development of globally relevant metrics for diet quality.

Dr. Grajeda of PAHO summarized the process of issuing documents related to FBDG for the Latin American and Caribbean (LAC) countries. It includes analysis of the health and nutrition situation for the relevant population, development of technical recommendations, and drafting an implementation strategy and national objectives. Dr. Grajeda noted that all LAC countries except Ecuador, Peru, and Haiti have national dietary guidelines. Three countries in the LAC region have guidelines specific to adolescents and some have guidelines specific to pregnant and lactating women. In addition, Brazil recently released new innovative dietary guidelines that are based on foods, food patterns, and meals, rather than nutrients (Ministry of Health of Brazil, 2014).

THE LANDSCAPE OF THE NUTRITIONAL STATUS OF ADOLESCENT GIRLS AND WRA

Dr. Laura Caulfield of Johns Hopkins University presented findings on the current landscape of nutritional status of and dietary intake among adolescent girls, WRA, and women during pregnancy and lactation, commissioned by SPRING. The issues discussed included: height, body mass index (BMI), micronutrient deficiencies, and nutrient intake.

Stature/height

Dr. Caulfield reminded participants that short stature among WRA can negatively affect birth outcomes and later-in-life nutritional status. The risk of delivering a baby that is small for gestational age (SGA) at term, preterm but adequate for gestational age, or preterm-SGA, is higher among women with a short stature with the highest risk observed among those < 145 cm tall (Kozuki et al., submitted).

Dr. Caulfield presented data showing that the prevalence of short stature (< 155 cm) reaches 70 percent in South Asia and Southeast Asia, with the prevalence of women < 145 cm tall about 10 percent. In the other regions, the prevalence of short stature is lower but still ranges from 20 percent to 42 percent as compared to 14 percent in the United States (Kozuki et al., submitted).

Body mass index

Dr. Caulfield explained that the BMI of a woman entering pregnancy also has the potential to influence pregnancy outcomes. Whereas earlier work examined the associations of low absolute weight with poor pregnancy outcomes, including preterm delivery and having a baby born of low birth weight (LBW < 2500g), later work has focused on the risks associated with women being overweight and obese before and during pregnancy. High BMI is associated with poor pregnancy outcomes as well as difficulties with lactation. BMI is also a measure of wellbeing among adolescent girls and non-pregnant women.

Data compiled for the Lancet series in 2013 indicate that globally, between 40 and 60 percent of women ages 20-49 years are of normal weight and less than 5 percent are underweight in all regions except in Asia and Africa where between 10-20 percent are underweight, and South Asia, where more than 20 percent are underweight (Black et al., 2013).

Trend data show that the prevalence of underweight and overweight status of WRA has shifted over time, with reductions in the prevalence of underweight in all regions, and increases in the prevalence of overweight and obesity. The prevalence of overweight varies substantially among regions and is highest in the LAC and Oceania regions, where 50 percent of women were estimated to be overweight or obese in 2008. When examined by age, overweight and obesity increased among women 20-30 years, suggesting postpartum weight retention as a potential explanatory factor (Black et al., 2013).

Among adolescent girls, particularly those 15-19 years, the problem of underweight is less well characterized, but appears to be consistent with those of women 20-49 years, except in South Asia where the prevalence of underweight among girls 15-19 years may be as high as 40 percent. The available data indicate that the prevalence of overweight in girls 15-19 years ranges from 3-5 percent in South and Southeast Asia, to 23 percent in the Andean countries of South America (Ng et al., 2014; see Finucane et al., 2011 and Stevens et al., 2012 for methodology). Since the 1980s, the prevalence of overweight in girls in lower middle-income countries (LMIC) has been increasing steadily, but the prevalence of obesity has remained relatively flat/constant at less than 10 percent (Ng et al., 2014).

Micronutrient deficiencies

Micronutrient deficiencies among adolescent girls and WRA in LMIC are associated with a number of adverse health outcomes. Iron deficiency anemia (IDA) is associated with 22 percent of all maternal deaths (Stoltzfus et al., 2004) and is an important risk factor for total global morbidity and mortality (Ezatti et al., 2006). IDA increases the risk of premature delivery, and maternal and child mortality. It can also negatively impact cognitive and physical

development of children and the physical stamina and productivity of people of all ages (Horton and Ross 2003). Likewise, vitamin A deficiency (VAD) can result in growth retardation, impaired vision, increased susceptibility to infection, and increased risk of complications and mortality (Christian 2000; Tielsch 2008). Other micronutrients of concern include folic acid, calcium and vitamin D, zinc, and vitamin B12. Deficiencies in these can result in growth retardation (Black 2001), adverse pregnancy outcomes and other congenital anomalies, gestational hypertension, which is the second leading cause of maternal morbidity and mortality, and impaired mental functioning (Black 2001; Duley 2009; Ray 2007).

Dr. Caulfield presented data on VAD (serum retinol < 0.70 umol/L) among pregnant women, revealing rates as high as 14 percent in Africa and 18 percent in Asia, while night blindness is as high as 9 percent in Africa and 8 percent in Asia (WHO, 2009; Black et al., 2013). She referred participants to the Global Burden of Disease report and the work of the Child Health Epidemiology Reference Group, which have synthesized the available data on anemia, severe anemia, VAD, and iodine and zinc deficiency among WRA in LMIC (Black et al., 2013; Andersson et al., 2012; Stevens et al., 2015; Wessells and Brown, 2012). Of particular concern is night blindness in Africa and Asia (WHO, 2009; Black et al., 2013), and the prevalence of anemia—between 18 and 48 percent—in WHA, with the highest rates found in South Asia (47 percent) and in Central/East Africa (48 percent) (Stevens et al., 2013). While data on the prevalence of anemia, vitamin A, iodine, and zinc deficiency are available for many countries, there is relatively limited data on the prevalence of other micronutrient deficiencies.

Inadequate folate status among women during the peri-conceptional period is an important predictor of spina bifida and anencephaly. Dr. Caulfield explained that surveys conducted in LMIC do not usually assess folate status, but investigators have compiled and reported data on the effective dose and coverage of folic acid fortification programs to identify countries and regions at risk (Youngblood et al., 2012). The effectiveness of folic acid fortification programs is high in the Americas, with the exception of Venezuela, Nicaragua, Paraguay, Suriname, Guyana, French Guiana, and the Dominican Republic. In other regions of the world, folic acid fortification or supplementation programs are not conducted, not evaluated, or not reported.

Dietary intakes

Dr. Caulfield also presented data on dietary intake among adolescent girls and WRA. She noted that for this landscape analysis she used published data sources, but did not filter for data quality or sample size. In addition, it should be noted that studies on dietary intake have tended to focus on populations experiencing undernutrition. Her analysis revealed the following:

- Adolescent girls and WRA do not face dietary concerns distinct from one another in terms of imbalanced macronutrient or inadequate micronutrient intakes.
- Average nutrient intakes are inadequate in LMIC across regions and target groups.
- The diets of non-pregnant adolescent girls and WRA in LMIC are cereal-based.
- Protein, fat, and iron intakes are similar among adolescent girls and WRA.
- Energy intakes are low, but slightly higher among WRA than adolescent girls. However, as noted above, this finding likely reflects the fact that research has been focused on undernourished populations.

- The trend in energy intakes between regions is the same for adolescent girls and WRA, with the energy intakes in the Americas, Eastern Mediterranean, and Africa being relatively higher than those in Southeast Asia and the Western Pacific.
- Fat intakes are, on average, within the range of recommendations, but there are cases where intake exceeds the recommended amount.
- Protein intakes among adolescent girls and WRA are within the range of recommendations.
- There is an inverse relationship between intakes of fat and carbohydrates among adolescent girls and WRA.
- Among both adolescent girls and WRA, a high proportion of energy intake comes from fat.
- The percentage of energy intake from macronutrients varies to a greater degree among WRA than among adolescent girls.
- The pattern of iron, vitamin A, and vitamin C intakes for adolescent girls and women is similar.
- Calcium and iron intakes are low among adolescent girls and WRA, while vitamin C and vitamin A intakes appear to meet recommendations.
- Among adolescent girls and WRA, intakes of iron, folate, calcium and zinc, are most frequently inadequate.
- Consumption rates of unhealthy foods such as processed meat and sugar-sweetened beverages by women 20-29 years of age were based on the recent article by Imamura et al. (2015). While there was a great deal of variance, intake was above the mean of the theoretical minimal risk exposure distribution.

GOALS FOR IMPROVING THE NUTRITIONAL STATUS OF ADOLESCENT GIRLS AND WRA

Based on her review of the evidence, Dr. Caulfield also proposed dietary goals for improving the nutritional status of adolescent girls and WRA during each stage on the continuum of care, focusing on preconception, pregnancy, lactation, and the postpartum period.

Goals for the preconception period

The goal of preconceptional care is to improve the health and wellbeing of adolescent girls and WRA for their own sake (with respect to health in the short and long-term) and in case they become pregnant. Because only a fraction of women/girls become pregnant at any time (because of abstinence, contraception, and infertility) and because pregnancies are largely, broad-based programs are needed to obtain coverage during the preconceptional period. However, in some settings, it is reasonable to target newly married women or women who have recently given birth as those most likely to conceive in the near term. The following are the goals Dr. Caulfield presented for this stage of the lifecycle.

- **Achieve normal weight:** The goal of achieving normal BMI is important for wellbeing regardless of whether or not a pregnancy is in the near or distant future.
- The probability that a person has insufficient energy intake increases as BMI decreases, and among females (malnutrition causing the low BMI), the likelihood of amenorrhea increases dramatically when BMI

is less than 16 kg/m²—a clear signal of an adverse nutritional state. It is logical to conclude that increased energy intake (through consumption of nutrient-dense foods) would lead to weight gain and eventually to the achievement of a normal BMI.

- The risk of overweight and obesity carry their own associated risks for chronic disease, including diabetes, dyslipidemia, and high blood pressure. What this means for pregnancy and antenatal care is that a greater percentage of women will have underlying health issues that may lead to pregnancy complications and that require appropriate management. Although the extent to which weight normalization will reduce these accompanying health risks is not quantified, it is likely to be a marginal benefit of achieving a normal weight in general and in the event of pregnancy.
- There are few studies evaluating the efficacy of different intervention strategies to reduce overweight and obesity before pregnancy. However, there is a vast literature on strategies to affect weight loss. Key components of weight loss and maintenance are caloric restriction, increased physical activity, self-monitoring, and behavior therapy (Phelan et al., 2011).
- In her paper, Dr. Caulfield explained that focusing on key behaviors such as television watching or reducing soft drinks are only moderately effective and should be combined with the core components listed above, and approaches involving education alone are known to be non-effective (and in fact constitute the control group when evaluating other intervention strategies) (Phelan et al., 2011). Dr. Caulfield called for more research on interventions to increase BMI among girls and women with BMI < 18.5 kg/m².
- **Maintain or improve diet quality:** In this context, diet quality is defined as a diet providing recommended macronutrient distributions and adequate amounts of micronutrients. Specifically, the intakes of these key nutrients are known to be deficient in the diets of adolescent girls and WRA in LMIC: calcium, iron, iodine, folic acid, and vitamins A and C.
- Dr. Caulfield explained that the majority of evidence is related to home- or school-based interventions with the primary goal being weight loss. However, this evidence is based on studies that are methodologically weak and the effects are modest or low. One study, recently reviewed by Rees et al., (2013), did suggest that advice given to adult men and women to increase fruit, vegetable, and fiber intake within the context of cardiovascular disease prevention can elicit greater changes and that these changes can have clinical significance.
- **Maintain or improve physical activity and an active lifestyle:** Maintaining an active lifestyle has health benefits (mental, cardiovascular, metabolic) regardless of weight, and promotion of physical activity before pregnancy is important because: a) recommendations are to continue physical activity but not to start a new regimen during pregnancy, and; b) women typically decrease their level of activity during pregnancy. Dr. Caulfield reported numerous effective approaches to improving physical activity, including behavioral, social support, environmental, and policy approaches to create and improve access to places for physical activity in communities, schools, and workplaces (Heath et al., 2012).
- **Other goals for the preconceptional period that were mentioned but not elaborated on during the meeting include:**
 - Prevent or treat anemia to help achieve adequate iron stores.

- Maintain sufficient iodine intake to reduce the risk of thyroid disorders.
- Maintain sufficient vitamin A intake to maintain retinol concentrations.
- Ensure folic acid intake of 400 ug/d.

Goals for pregnancy

The hope is that every pregnancy ends with a healthy mother and baby. To achieve this, Dr. Caulfield presented the following pregnancy goals:

- **Achieve appropriate gestational weight gain:** Dr. Caulfield said that appropriate weight gain during pregnancy is essential for a healthy pregnancy outcome for both the mother and the baby. She explained that inadequate weight gain may lead to intrauterine growth restriction or birth weights that are SGA, while excess weight gain may lead to problems associated with gestational diabetes, macrosomia (birth weight > 4000g), delivery complications, and difficulties during lactation. She also referenced the IOM recommended guidelines for weight gain during pregnancy, which are based on a mother' pre-pregnancy BMI, recommending that women with lower BMI would achieve healthier pregnancy outcomes with higher gestational weight gains than those of women with normal BMI. Women entering pregnancy overweight or obese are more likely to achieve healthier outcomes with lower weight gains than those of normal weight (IOM, 1990). These guidelines have been maintained and were expanded in 2009 to include specific recommendations for obese women.
- **Eat a healthy diet:** See goals for the preconception period. Dr. Caulfield noted that while the principles for improving diet quality are similar, the challenges are greater among pregnant women with increased nutrients requirements.
- **Stay physically active:** See goals for the preconception period. In addition, Dr. noted that this goal is particularly challenging during pregnancy because women generally become less active during pregnancy. She found the quality of intervention studies in this area poor, with limited efficacy and no effect on gestational diabetes mellitus.
- **Other goals for pregnancy that were mentioned but not elaborated on during the meeting included:**
 - Take nutrient supplements
 - Manage gestational diabetes
 - Limit alcohol intake

Goals for lactation and the postpartum period

As mentioned, the issues are similar to that of pregnancy, with nutrient needs high during lactation. However, during this period there is emphasis on appropriate weight loss to prevent future chronic disease. Research to establish effective behavioral practices to achieve these goals are needed in earnest, especially in LMIC. With the available evidence, Dr. Caulfield proposed the following goals:

- **Maintain good nutrition (dietary intakes during lactation/weight change):** These are similar to the goals for the preconception period. In this case, maintaining good nutrition is not only important for ensuring the mother's own nutritional status, but also to ensure that mothers meet the increased

nutritional demands of lactation. Dr. Caulfield noted that while it is generally understood that breast milk volumes are not compromised by maternal undernutrition, maternal diet and nutrient status can affect breast milk concentration of some but not all nutrients.

- **Achieve postpartum weight loss/gain/stasis:** Dr. Caulfield found that interventions to promote postpartum weight management involving behavior change (diet and physical activity) have some impact.
- **Stay physically active:** See goals for the preconception period.
- **Sustain healthy changes for the long-term, including any subsequent pregnancy:** These are similar to the goals for the preconception period.

Dr. Caulfield concluded her presentation by emphasizing the need to characterize BMI status at the local level for appropriate programming. While in many world regions, the goal of having normal BMI means weight loss rather than weight gain, in South Asia there is urgent need to correct the problem of underweight among girls and women. She called for policies on nutrition over the continuum of care and coordination of dietary and eating guidelines with efforts to reduce chronic disease. She also encouraged further research to identify best practices to improve dietary intakes and achieve health weight across the continuum of care.

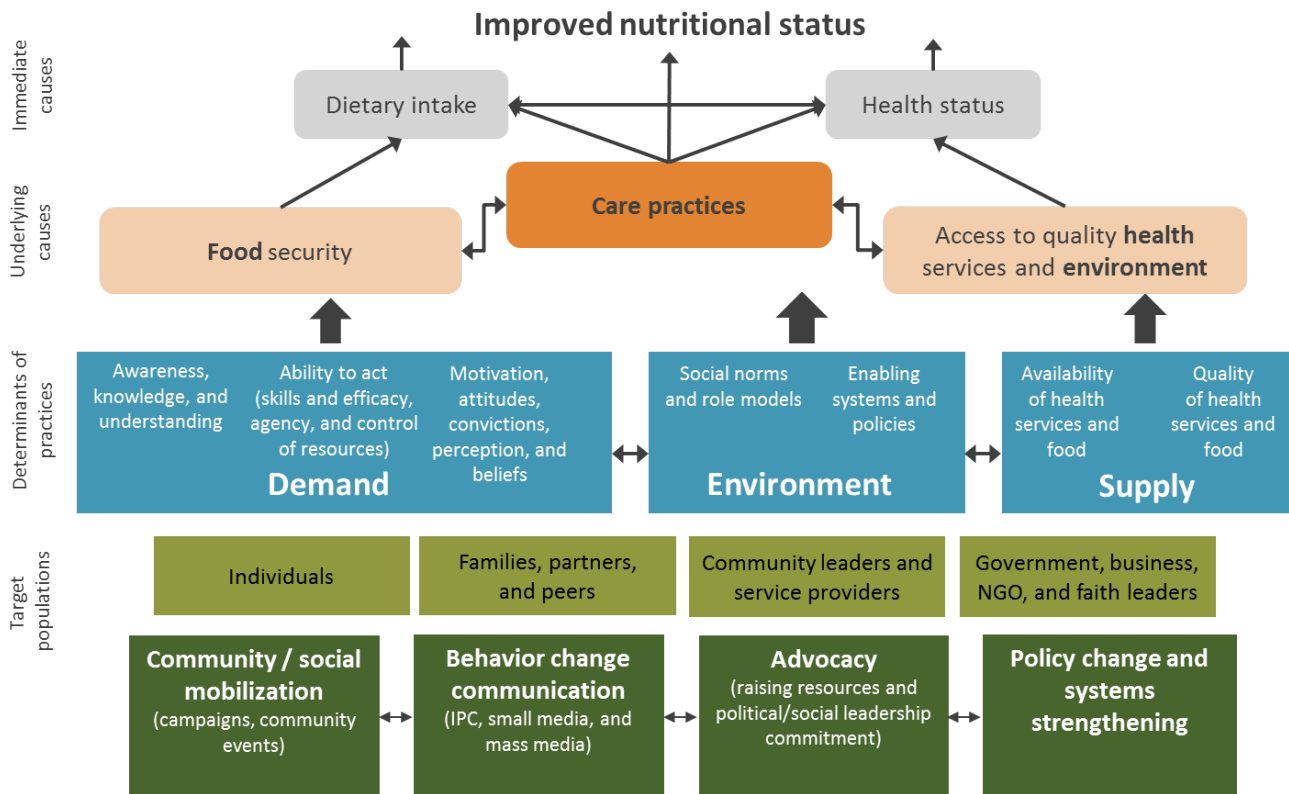
PROGRAMMATIC EXPERIENCES AND PLATFORMS FOR PROMOTING KEY DIET AND EATING PRACTICES

On the second day of the meeting, Dr. Sascha Lamstein of the SPRING project presented findings from [SPRING's review of programmatic responses to the nutritional needs of adolescent girls and WRA](#). The premise of this review was that no matter how efficacious an intervention may be in improving health status, dietary intake will not be improved and care practices will not be adopted and sustained if it is not feasible for the targeted populations. The intervention must also address the relevant determinant(s), have the right delivery strategy, and target the right audience(s). See Figure 1.

Dr. Lamstein and colleagues from SPRING reviewed the literature on programs intended to improve nutritional status and practices among adolescent girls and/or WRA from 2004 to the present. Google, Google Scholar, USAID's Development Experience Clearinghouse², and the World Bank Project Database were also searched. In addition, the websites of major organizations, implementing agencies, and USAID-funded programs were explored for relevant nutrition programs. Articles were included in the review if they reported on activities implemented anytime between 2004 and 2014 and promoted dietary, eating, or other nutrition practices aimed at improving the nutritional status of adolescent girls and/or WRA. Articles were excluded from the review if they reported on activities implemented prior to 2004, were controlled trials, or did not provide program-specific information.

² The DEC is "the largest online resource for USAID-funded technical and project materials." See: <https://dec.usaid.gov/dec/>

Figure 1: Pathways to improved nutritional status



To gather more detailed programmatic information, an online survey³ was developed after an initial review of the literature including the 2013 Lancet series. The survey was reviewed by experts from SPRING and PAHO. The objective of the survey questions was to gather detailed programmatic information including name, dates of implementation, donor, geographic region, approaches and priority practices, challenges, availability of reports, and knowledge of other programs to contact for inclusion in the exercise. Individuals identified as program managers through the literature and internet search, as well as others known by the authors, were sent a link to the survey. Of 47 persons/institutions contacted, 15 survey responses provided detailed programmatic information on eight projects.

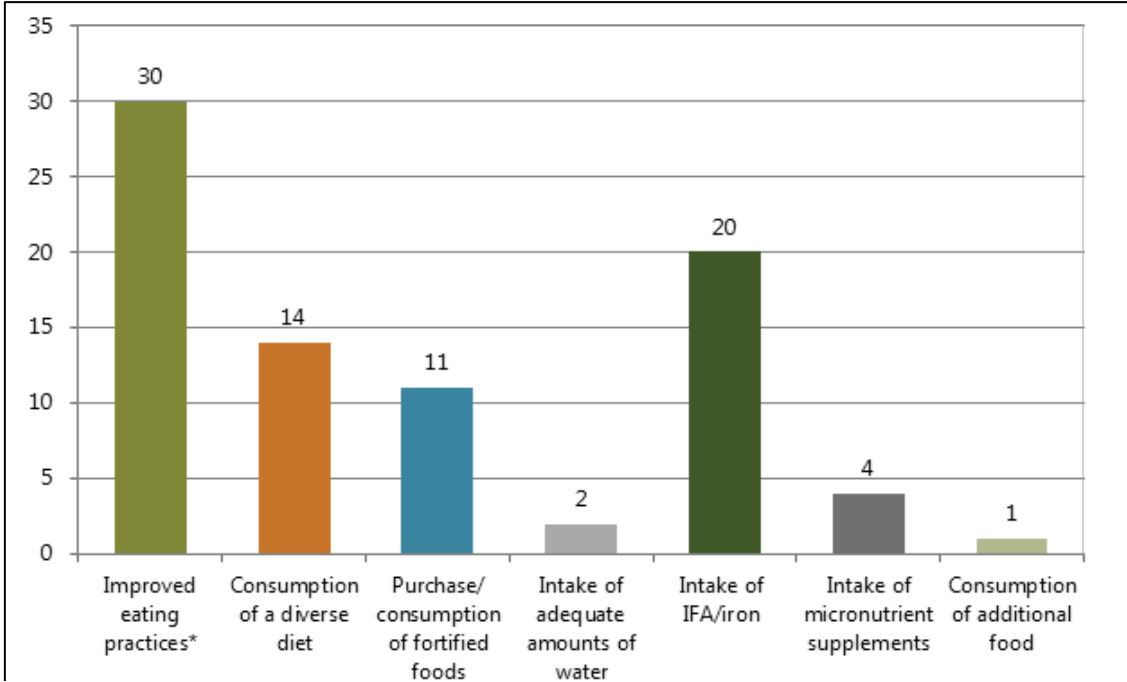
SPRING identified and reviewed findings on 53 programs supported by USAID, the World Bank, the Bill & Melinda Gates Foundation, GAIN, DFID, UNICEF, and others. Of those, only nine targeted adolescent girls and 46 targeted WRA.

Consistent with the goals presented by Dr. Caulfield, the literature and published reports reviewed by SPRING indicated that among adolescent girls and WRA programs typically promote improved eating practices; consumption of a diverse diet; purchase or consumption of fortified foods; intake of adequate water; intake of iron-folic acid (IFA) or iron supplements; intake of micronutrient supplements; and consumption of additional food (see Figure 2). Among adolescent girls, the most commonly promoted practices were IFA/iron intake (6

³ The online software SurveyMonkey® was used for this survey.

programs), consumption of a diverse diet (6 programs), and improved eating practices⁴ (5 programs), while among WRA they were improved eating practices (26 programs) and the consumption/intake of IFA/iron (16 programs).

Figure 2: Number of programs reviewed that promoted each key practice



Delivery strategies used by the programs reviewed included community-based nutrition education; mass media; distributions of micronutrients, food, or cash; capacity building of service workers, local organizations, or governments; and policy, strategy, or protocol development. Dr. Caulfield added that in preparing for this meeting she identified three broad approaches to programs for adolescent girls and WRA: 1) generalized wellbeing or lifestyle interventions to promote healthy eating/active lifestyle largely to reduce/prevent obesity and chronic disease risk; 2) as a component of pregnancy preparation, and; 3) postpartum care to either improve women’s health and/or prepare for the next pregnancy (or inter-pregnancy care).

The evidence available on the design and effectiveness of interventions to improve diets and nutrition of adolescent girls and WRA is generally lacking. Of the programs reviewed by SPRING, only 15 provided data on program effectiveness. As mentioned earlier, Dr. Caulfield’s literature review had similar results. The effectiveness of interventions to reduce “unhealthy foods” (e.g., sugar-sweetened beverage) consumption and/or increase consumption of “healthy foods” in LMIC is particularly lacking.

DISCUSSION AND CONCLUSIONS OF MEETING PARTICIPANTS

Meeting participants agreed that the evidence to develop key practices for diet and eating practices of adolescent girls and WRA is not as strong as the evidence that led to the guidelines for feeding breastfed and non-breastfed

⁴ The category ‘Improved eating practices’ was used when programs reported promoting ‘dietary practices’, ‘eating practices’, or ‘food intake.’

children. This is particularly the case for adolescent girls. Although meeting organizers and participants recognized the importance of eating practices, this was not fully explored in the meeting and will require further research.

Nonetheless, there was consensus that it would be useful to develop guidance on such practices in order to focus attention on the diet and nutritional status of these populations. Such a document could be used for programming and advocacy as well as research prioritization.

During discussion, several participants flagged the global transition in diet and eating practices, and general globalization and urbanization. This is particularly evident in the increased consumption of animal products and refined carbohydrates and the low intake in whole grains, fruits, and vegetables (Hu, 2008; Mendez and Popkin, 2004).

Participants agreed that principles for diet and eating practices for adolescent girls and WRA should:

- Be well-grounded for implementation within countries;
- Based or closely linked to national FBDG or on international recommendations for healthy diets and physical activity; and
- Highlight or emphasize issues specific to those populations.

Contextual factors deemed important to consider include food security, food safety, sustainability, adaptation to cultural context, gender roles, illness, and seasonality.

Through group discussion, a set of overarching principles related to *food safety, adequacy, moderation, balance* and *variety* were identified. It was noted that while specific practices for adolescent girls and WRA may not be all that different from those designed for the population at large, the delivery strategies would likely differ.

Important practices included:

- Eat a variety of foods
- Choose legumes and whole grain cereals instead of highly refined grains
- Eat lots of fruits and vegetables, including dark green and leafy and yellow/orange ones and legumes
- Use oils sparingly
- Practice safe storage and preparation of food and wash hands before preparing and eating food
- Drink water (potable or boiled)
- Consume moderate amounts of animal source foods
- Limit intake of sugar-sweetened beverages and sugary fruit juices
- Limit intake of salt, salty condiments and salty snacks. When salt is used, it should be iodized
- Limit intake of highly refined and ultra-processed foods

Several meeting participants suggested that recommendations for physical activity be included alongside diet and eating practice recommendations. In addition, depending on her physiological state and access to and consumption of foods high in vitamins and minerals, a woman may need supplementation throughout her lifecycle. For example, iron supplements are recommended among menstruating women (WHO 2013). Dr. Caulfield noted a need to characterize BMI status at the local level for appropriate programming. She explained

that while in many world regions the goal of having normal BMI means weight loss rather than gain, in South Asia, there is an urgent need to address the problem of underweight among girls and women. Therefore, during each stage of a woman's lifecycle, improvements in nutrient intake must be considered within the context of overall weight management (i.e., preventing underweight as well as overweight and obesity).

Some of the key research gaps and questions related to promoting diet and eating practices for adolescent girls and WRA that participants discussed were:

- How effective are existing programs at improving diets and nutrition of adolescent girls and WRA?
- What interventions will enhance the ability of adolescent girls and WRA to attain an optimal diet?
- How can issues related to dietary practices be addressed when households lack access to an adequate variety of foods that should be contained within an optimal diet?
- What interventions will enhance the ability of adolescent girls and WRA to achieve adequate physical activity within an active lifestyle?
- How do the diet and physical activity influence outcomes (e.g., underweight and overweight, stature reached during adolescence, micronutrient deficiencies) and impacts (e.g., pregnancy and birth results, productivity, and noncommunicable disease)?

PROPOSED NEXT STEPS

To continue the process initiated at the technical meeting, the meeting organizers recommend the following steps:

1. Organize a webinar showcasing programmatic experience promoting optimal diet and eating practices of adolescent girls and WRA.
2. Update the programmatic background paper, expanding on the original background paper and summarizing additional programmatic approaches identified by participants for improving diet and eating practices of adolescent girls and WRA.
3. Conduct a review of the WHO nutrition guidelines and the Scientific Report of the 2015 Dietary Guidelines Advisory Committee (USDA 2015) to identify those practices listed above for which guidance exists and for which there are gaps.

REFERENCES

- Andersson, M, Karumbunathan V, Zimmermann MB. 2012. "Global iodine status in 2011 and trends over the past decade." *Journal of Nutrition* 142(4):744-50. Erratum in: *J Nutr* 2012 Jun;142(6):1128.
- Bateman, BT, Shaw KM, Kuklina EV, Callaghan WM, Seely EW, Hernández-Díaz S. 2012. "Hypertension in Women of Reproductive Age in the United States: NHANES 1999-2008." *PLoS ONE* 7(4):e36171.
- Bhutta, ZA, Das JK, Rizvi A, Gaffey MF, Walker N, Horton S, Webb P, Lartey A, and Black RE. 2013. "Evidence-based Interventions for Improvement of Maternal and Child Nutrition: What Can Be Done and at What Cost?" *The Lancet* 382 (9890): 452-477.
- Black, RE. 2001. "Micronutrients in pregnancy." *British Journal of Nutrition* 85(Suppl 2):S193-S197.
- Christian P, West KP Jr, Khatri SK, Kimbrough-Pradhan E, LeClerq SC, Katz J, et al. 2000. "Night blindness during pregnancy and subsequent mortality among women in Nepal: effects of vitamin A and beta-carotene supplementation." *American Journal of Epidemiology* 152(6):542-7.
- Duley L. 2009. "The global impact of pre-eclampsia and eclampsia." *Seminars in Perinatology* 33(3):130-7.
- Ezzati, M, Vander Hoorn S, Lopez AD, Danaei G, Rodgers A, Mathers CD, and Murray CJL. 2006. "Comparative quantification of mortality and burden of disease attributable to selected risk factors." In *Global Burden of Disease and Risk Factors*, edited by Alan D. Lopez, Colin D. Mathers, Majid Ezzati, Dean T. Jamison, and Christopher J. L. Murray, 241-268. Washington DC: World Bank and Oxford University Press.
- Finucane MM, Stevens GA, Cowan MJ, Danaei G, Lin JK, Paciorek CJ, Singh GM, Gutierrez HR, Lu Y, Bahalim AN, Farzadfar F, Riley LM, Ezzati M, on behalf of the Global Burden of Metabolic Risk Factors of Chronic Diseases Collaborating Group (Body Mass Index). 2011. "National, regional, and global trends in body-mass index since 1980: systematic analysis of health examination surveys and epidemiological studies with 960 country-years and 9.1 million participants." *The Lancet* 377(9765):557-67.
- Heath GW, Parra DC, Sarmiento OL, Andersen LB, Owen N, Goenka S, Montes F, Brownson RC, for the Lancet Physical Activity Series Working Group. 2012. "Evidence-based intervention in physical activity: lessons from around the world." *The Lancet* 380: 272-81
- Horton, S, and Ross J. 2003. "The Economics of Iron Deficiency." *Food Policy* 28(1):51-75.
- Hu, FB. 2008. "Globalization of food patterns and cardiovascular disease risk." *Circulation*. 118:1913-4.
- Imamura F, R Micha, S Khatibzadeh, S Fahimi, P Shi, J Powles, D Mozaffarian, on behalf of the Global Burden of Diseases Nutrition and Chronic Diseases Expert Group (NutriCoDE). 2015. "Dietary quality among men and women in 187 countries in 1990 and 2010: a systematic assessment." *The Lancet Global Health*. (3):e132-e142.
- Institute of Medicine and National Research Council. 1990. *Nutrition During Pregnancy: Part 1: Weight Gain; Part 2: Nutrient Supplements*. Washington, DC: National Academies Press.
- Johansson S, Villamor E, Altman M, Bonamy A-KE, Granath F, Cnattingius S. 2014. "Maternal overweight and obesity in early pregnancy and risk of infant mortality: a population based cohort study in Sweden." *BMJ*. 349(dec02 6):g6572-g6572.
- Kozuki N, Lee ACC, Vogel J, Silveira M, Sania A, Adair L, Caulfield LE, Christian P, Fawzi W, Humphrey J, Huybregts L, Merialdi M, Mongkolchat A, Ntozini R, Osrin D, Roberfroid D, Tielsch J, Vaidya A, Victora C, Black RE, Katz J. "Maternal short stature as a risk factor for small-for-gestational age and preterm birth in low and middle income countries: meta-analysis and population attributable risk." *BMJ* (submitted).

- Leddy MA, Power ML, Schulkin J. 2008. "The Impact of Maternal Obesity on Maternal and Fetal Health." *Reviews in Obstetrics and Gynecology* 1(4): 170–178.
- Mendez M and Popkin B. 2004. "Globalization, Urbanization and Nutritional Change in the Developing World." *Journal of Development and Agricultural Economics* 1(2):220-241.
- Ministry of Health of Brazil. 2014. *Dietary Guidelines for the Brazilian Population. 2nd Edition*. Brasilia DF. Available at: <http://www.foodpolitics.com/wp-content/uploads/Brazilian-Dietary-Guidelines-2014.pdf>
- Ng M, Fleming T, Robinson M, Thomson B, Graetz N, Margonon C, Mullany EC, et al. 2014. "Global, regional, and national prevalence of overweight and obesity in children and adults during 1980–2013: a systematic analysis for the Global Burden of Disease Study 2013." *The Lancet* 30;384(9945):766–81.
- PAHO/WHO. 2003. *Guiding Principles for Complementary Feeding of the Breastfed Child*. Washington DC: Pan American Health Organization, World Health Organization. Available at: http://www.paho.org/hq/index.php?option=com_content&view=article&id=5666&Itemid=4069&lang=en.
- PAHO. 2014. *Plan of Action for the Prevention of Obesity in Children and Adolescents* CD53/9. Available from: <http://www.paho.org/childnutrition>
- Phelan S, Jankovitz K, Hagobian T, Abrams B. 2011. "Reducing excessive gestational weight gain: lessons from the weight control literature and avenues for future research." *Women's Health* 7(6): 641–661.
- Proctor SB, Campbell CG. 2014. "Position of the Academy of Nutrition and Dietetics: nutrition and lifestyle for a healthy pregnancy outcome." *J Acad Nutr Diet* 114(7): 1099–1103.
- Ray JG, Wyatt PR, Thompson MD, Vermeulen MJ, Meier C, Wong PY, et al. 2007. "Vitamin B12 and the risk of neural tube defects in a folic-acid-fortified population." *Epidemiology* 18(3):362-6.
- Rees K, Dyakova M, Wilson N, Ward K, Thorogood M, Brunner E. 2013. "Dietary advice for reducing cardiovascular risk." *Cochrane Database Syst Rev* 12:CD002128.
- Stevens GA, Singh GM, Lu Y, Danaei G, Lin JK, Finucane MM, Bahalim AN, and the Global Burden of Metabolic Risk Factors of Chronic Diseases Collaborating Group (Body Mass Index). 2012. "National, regional, and global trends in adult overweight and obesity prevalences." *Popul Health Metr* 10: 22.
- Stevens GA, Finucane MM, De-Regil LM, Paciorek CJ, Flaxman SR, Branca F, Peña-Rosas JP, Bhutta ZA, Ezzati M; Nutrition Impact Model Study Group (Anaemia). 2013. "Global, regional, and national trends in haemoglobin concentration and prevalence of total and severe anaemia in children and pregnant and non-pregnant women for 1995–2011: a systematic analysis of population-representative data." *Lancet Glob Health* 1(1):e16-25.
- Stevens GA, Bennett JE, Hennocq Q, Lu Y, De-Regil LM, Rogers L, Danaei G, Li G, White RA, Flaxman SR, Oehrle SP, Finucane MM, Guerrero R, Bhutta ZA, Then-Paulino A, Fawzi W, Black RE, Ezzati M. 2015. "Trends and mortality effects of vitamin A deficiency in children in low-income and middle-income countries between 1991 and 2013: a pooled analysis of population-based surveys." *Lancet Global Health*. 3(9):e528-36. .
- Stoltzfus, RJ, Mullany L, and Black, RE. 2004. "Iron Deficiency Anemia." In *Comparative Quantification of Health Risks: Global and Regional Burden of Disease Attributable to Selected Major Risk Factors*, edited by Ezzati M, Lopez AD, Rodgers A, and Murray CJL, 163-209. Geneva, Switzerland: World Health Organization.
- Tielsch JM, Rahmathullah L, Katz J, Thulasiraj RD, Coles C, Sheeladevi S, et al. 2008. "Maternal night blindness during pregnancy Is associated with low birthweight, morbidity, and poor growth in South India." *Journal of Nutrition* 138(4):787-92.
- USAID. 2014. *USAID Multi-Sectoral Nutrition Strategy 2014-2025*. Available at: <http://www.usaid.gov/nutrition-strategy>
- USDA. 2015. *Scientific Report of the 2015 Dietary Guidelines Advisory Committee*. Washington, DC: USDA.

- Wessells K. R. & Brown K. H. 2012. "Estimating the global prevalence of zinc deficiency: results based on zinc availability in national food supplies and the prevalence of stunting." *PloS ONE* 7, e50568.
- WHO. 2005. *Guiding Principles for Feeding Non-Breastfed Children 6-24 Months of Age*. Geneva: World Health Organization. http://www.who.int/maternal_child_adolescent/documents/9241593431/en/
- WHO. 2009. *WHO Global Database on Vitamin A Deficiency*. Geneva: WHO.
- WHO. 2012. *WHO Handbook for Guideline Development*. Geneva: WHO. http://apps.who.int/iris/bitstream/10665/75146/1/9789241548441_eng.pdf
- WHO. 2013. *Essential Nutrition Actions: Improving maternal, newborn, infant, and young child health and nutrition*. Geneva: World Health Organization.
- WHO/UNICEF. 1998. *Complementary feeding of young children in developing countries: a review of current scientific knowledge*. Geneva: World Health Organization, WHO/NUT/98.1.
- Youngblood ME, Williamson R, Bell KN, Johnson Q, Kancherla V, Oakley G. 2013. "2012 update on folic acid-preventable spina bifida and anencephaly." *Birth Defects (Part A)* 97:658-663.

ANNEX 1: PARTICIPANT LIST

TECHNICAL MEETING ON THE DIET AND EATING PRACTICES OF ADOLESCENT GIRLS AND WOMEN OF REPRODUCTIVE AGE

Washington, D.C., March 16-17, 2015

INVITED PARTICIPANTS

Armbruster, Debbie*
Senior Maternal and Newborn Health Advisor
USAID
USA

Arimond, Mary
Analyst and Project Manager
Program in International and Community
Nutrition
University of California, Davis
USA

Ashorn, Per*
Head of Department and Professor of
International Health
University of Tampere Finland

Becerra, Francisco
Assistant Director
Pan American Health Organization/WHO USA

Begin, France*
Senior Nutrition Adviser for IYCN
UNICEF
USA

Calle, Maria del Carmen
Adolescent Health Consultant
Pan American Health Organization
Peru

Canahuati, Judy*
MCH, Nutrition and HIV Advisor
USAID/DCHA/FFP
USA

Castellanos, David
Project Management Specialist
USAID Honduras

Caulfield, Laura
Professor
Department of International Health
School of Public Health Johns Hopkins University
USA

Creed de Kanashiro, Hilary* Senior Researcher
Institute for Investigation in Nutrition
Peru

Dary, Omar
Health Science Specialist for Nutrition
USAID USA

de Regil, Luz Marie*
Director for Research and Evaluation and
Chief Technical Advisor Micronutrient Initiative
Canada

Dewey, Kathryn
Director, Program in International and Community
Nutrition and Distinguished Professor
Department of Nutrition University of
California, Davis USA

Duran, Pablo*
Regional Advisor on Perinatal Health Centro
Latinoamericano de Perinatologia Pan American
Health Organization/WHO Uruguay

Elder, Leslie*
Senior Nutrition Specialist
World Bank
USA

Elliot, Victoria Graduate Student School of Public
Health
Johns Hopkins University
USA

Fogg, Karen*
Maternal Nutrition Advisor
USAID USA

Galloway, Rae
Nutrition Technical Team Lead
PATH USA

González de Cosío, Teresita
Professor
National Institute of Public Health
Mexico

Griffiths, Marcia
President
The Manoff Group, Inc. USA

Guyon, Agnes
Senior Nutrition and Child Health Advisor
JSI USA

Hennis, Anselm*
Director
Department of Non Communicable Diseases Pan
American Health Organization/WHO USA

Huffman, Sandra* Research
Nutritionist UC Davis USA

Hurtado, Elena^
Senior Technical Advisor University Research Co., LLC
Guatemala

Jennings, Joan
TOPS Nutrition Task Force Chair
The TOPS Program
USA

Jordan-Bell, Elizabeth
Nutrition Advisor USAID
USA

Klemm, Rolf*
Vice President for Nutrition Helen Keller International
USA

Koblinsky, Marge^
Senior Maternal Health Advisor
USAID USA

Kurz, Kathleen
Independent Consultant USA

Lapping, Karin
Senior Director of Nutrition Department of Health
and Nutrition Save the Children

USA

Lartey, Anna*
Director Nutrition Division
Food and Agriculture Organization of the United
Nations
Italy

Lung'aho, Mary^
Special Advisor MIYCN CARE USA
USA

Martin-Prevel, Yves*
Senior Researcher and Deputy Director of Research
Unit (UMR204 'Nutripass') Institute of Research for
Development France

Menon, Purnima*
Senior Research Fellow IFPRI
India

Muthee, Maina
Nutrition Adviser UNICEF
USA

Neufeld, Lynnette
Director, MLR
Global Alliance for Improved Nutrition (GAIN)
Switzerland

Peña-Rosas, Juan Pablo^
Coordinator for Evidence and Programme
Guidance
Department of Nutrition for Health and
Development
World Health Organization
Switzerland

Peniston, Anne
Division Chief for Nutrition
USAID USA

Perez-Escamilla, Rafael
Professor of Nutrition, Epidemiology and
Public Health
Director of the Office of Public Health Practice
School of Public Health, Yale University
USA

Piwoz, Ellen
Senior Program Officer
Bill & Melinda Gates Foundation
USA

Quinn, Victoria*

Senior Vice President, Programs
Helen Keller International
USA

Ramakrishnan, Usha
Program Director for Doctoral Program in
Nutrition and Health Sciences
Hubert Department of Global Health
Rollins School of Public Health
Emory University
USA

Rasmussen, Kathleen* Professor
Division of Nutritional Sciences
Cornell University
USA

Reveiz, Ludovic
Advisor
Department of Knowledge Management, Bioethics,
and Research
Pan American Health Organization/WHO USA

Ruel, Marie
Director
Poverty, Health, and Nutrition Division
IFPRI USA

Sanghvi, Tina
Country Programs Director
Alive & Thrive
USA

Santos-Burgoa, Carlos*
Coordinator
Unit on Risk Factors and Nutrition Department of
Non Communicable Diseases Pan American Health
Organization/WHO USA

Stanton, Mary Ellen*
Senior Maternal Health Advisor
USAID USA

Stewart, Kellie
Nutrition Team Lead USAID
USA

Taylor, Katie
Deputy Assistant Administrator
Global Health
USAID USA

Torheim, Liv Elin
Professor

Faculty of Health Sciences
Oslo and Akershus University College
Norway

Wuehler, Sara
Senior Research Advisor Micronutrient Initiative
Canada

Secretariat Facilitator

Narayan, Anuradha
Director of Global Initiatives Strengthening
Partnerships, Results, and Innovations in Nutrition
Globally (SPRING) USA

FANTA

Deitchler, Megan
Deputy Director of Global Leadership
USA

Remancus, Sandra Project
Director USA

PAHO/WHO

Galicia, Luis
External Consultant
Guatemala

Grajeda, Ruben
Nutrition Advisor
Unit on Risk Factors and Nutrition Department of
Non Communicable Diseases and Mental Health
USA

Lagos, Tatiana
Administrative Assistant
USA

Lutter, Chessa
Senior Advisor Food and Nutrition
Unit on Risk Factors and Nutrition Department of
Non Communicable Diseases and Mental Health
USA

SPRING

Aakesson, Ashley
Social and Behavior Change Communication
Technical Advisor
USA

Ballard, Anne
Social and Behavior Change Communication
Consultant

USA

Beall, Kristina
Social and Behavior Change Communication
Manager
USA

Burger, Virginia
Project Coordinator USA

Hart, Carolyn*
Project Director USA

Koniz-Booher, Peggy
Senior Advisor for Nutrition Social and Behavioral
Change Communication USA

Lamstein, Sascha
Monitoring and Evaluation Specialist and
Systems for Nutrition Team Lead
USA

USAID

Manske, Mike
Nutrition and Food Security Advisor
USA

***Unable to attend**

^ Participated remotely

ANNEX 2: MEETING AGENDA

MONDAY 16 MARCH 2015

08h30-09h00	Coffee & Registration	
09h00-09h30	Welcome	Francisco Becerra Katie Taylor
09h30-09h45	Objectives and Outcomes	Peggy Koniz-Booher
09h45-10h00	Introductions	Anuradha Narayan
10h00-10h30	Presentation: Development of the Guiding Principles for Child Feeding	Chessa Lutter
10h30-11h00	Break	
11h00-11h30	Presentation: WHO Evidence-Informed Guideline Development Process	Ludovic Reveiz
11h30-12h30	Panel: Food-Based Dietary Guidelines for Adolescent Girls and WRA	Megan Deitchler Rafael Perez-Escamilla Mary Arimond Ruben Grajeda
12h30-01h30	Lunch	
01h30-02h00	Presentation: The Landscape of Nutrition of Adolescent Girls and Women (Paper 1, Section 1)	Laura Caulfield
02h00-02h45	Facilitated Discussion: Key Nutrition Problems and Causes	Participants
02h45-03h15	Break	
03h15-03h45	Presentation: Evidence-Based Solutions Within the Continuum of Care (Paper 1, Section 2)	Laura Caulfield
03h45-05h15	Facilitated Discussion: Key Diet and Eating Practices of Adolescent Girls and WRA	Participants
05h15-05h30	Wrap up	Anuradha Narayan
06h30-08h30	Dinner	

TUESDAY 17 MARCH 2015

08h30-09h00	Coffee	
09h00-09h15	Recap of Day 1	Anuradha Narayan
09h15-10h45	Facilitated: Getting to Key Diet and Eating Practices for Adolescent Girls	Participants
10h45-11h15	Break	
11h15-12h00	Facilitated Discussion: Getting to Key Diet and Eating Practices for WRA	Participants
12:00 – 12h30	Presentation: Programmatic Experiences and Platforms for Promoting key Diet and Eating Practices (Paper 2)	Sascha Lamstein
12h30-01h30	Lunch	
01h30-02h30	Consensus Building Around Process	Participants
02h30-03h00	Closing Remarks	



The SPRING project is managed by the JSI Research & Training Institute, Inc. (JSI), with partners Helen Keller International, the Manoff Group, Save the Children, and the International Food Policy Research Institute. The contents are the responsibility of JSI, and do not necessarily reflect the views of USAID or the United States Government.

SPRING

JSI Research & Training Institute, Inc.

1616 Fort Myer Drive, 16th Floor

Arlington, VA 22209, USA

Phone: 703-528-7474

Fax: 703-528-7480

Email: info@spring-nutrition.org

Internet: www.spring-nutrition.org

Facebook: www.facebook.com/bdspring