SECTION 04

Reducing Anemia

REDUCING ANEMIA

The proposed goal is to reduce anemia by 25 percent among adolescent girls and young women by providing iron and folic acid supplementation, as well as nutrition education and counseling, to at least 75 percent[69] of 10- to 24-year-old adolescent girls and young women.

Through this effort, the United States will be a key partner in realizing the World Health Assembly (WHA) global goal of a 50-percent reduction in anemia among women of reproductive age by 2025.

The estimated cost of weekly iron and folic acid supplementation for the 13 target countries is approximately $12 million per year or $48 million over four years, which includes $1 million per year required for capacity building, monitoring and evaluation, and policy development.

An additional $10 million per year ($40 million total) is included for operational research to fill knowledge gaps on the nutritional needs of adolescent girls and young women and how best to intervene, which includes understanding food intake and ways to improve dietary diversity.

OPERATIONALIZATION

All of the 13 target countries are members of the Scaling Up Nutrition (SUN) Movement and have committed by 2020 to establish costed nutrition plans with national targets, increase domestic and external funding for nutrition, regularly and transparently track budget allocations, and put in place data systems.[70] USAID was one of the initial partners in creating the SUN Movement, and its Multi-Sectoral Nutrition Strategy and the U.S. Global Nutrition Coordination Plan aim to align with and support SUN country plans. The U.S. government has platforms in place to bring nutrition interventions to scale. In addition, the U.S. government is expected to purchase critical commodities and provide technical assistance to governments, health providers, and others in the health and education sectors.

RATIONALE

Adolescence is a critical period of physical and cognitive growth,[71] and targeted interventions can improve cognitive development[72] and maximize height attainment.[73] In recent years, there has been a global commitment to address the 1,000-day period from conception to a child's second birthday.[74] However, the preconception period is also now recognized as critical for addressing a woman's nutritional needs and for preventing childhood stunting and poor birth weight in her future children. Only addressing nutritional needs once an adolescent girl or young woman is pregnant is too late, as many nutritional risks, such as obesity, cannot be quickly reversed.[75] Given high rates of unintended pregnancies among adolescent girls and young women, interventions should start in late childhood and early adolescence to achieve optimal nutrition.

Nonpregnant adolescent girls and young women of reproductive age and postpartum women have largely been excluded from programs and research,[79,80] but adolescent diets are known to be deficient in crucial micro-nutrients such as iron, iodine, folic acid, and vitamins A and C.[81] Of these, iron deficiency remained (from 1990 to 2013) the leading global risk factor for Disability-Adjusted Life Years (DALY)[82] for 10- to 14-, 15- to 19-, and 20- to

ASMA LATEEF

"We are at an exciting point in the fight against malnutrition. We have evidence-based, cost-effective interventions ready to be scaled up. For every dollar invested, there is a $16 return. With a focus on adolescent girls, we can begin to envision a future in which young women are empowered with knowledge and good health, and malnutrition no longer halts nor limits the potential of future generations. What could be a better investment?"

24-year-old females,[83] the sixth leading risk factor for death for 10- to 14-year-old girls, and the seventh for 15- to 19- and 20- to 24-year-old adolescent girls and young women.[84]

Iron deficiency is also the most common cause of anemia[85] accounting for 50 percent of cases.[86] Globally, anemia affects more than 500 million women 15 to 49 years old.[87] In 2015, iron-deficiency anemia caused 54,200 deaths.[88] It also affects cognitive function and causes fatigue and lethargy, which impairs one's ability to go to school and work and thus has economic consequences for the adolescent girl or young woman, her family, and her community. When an adolescent girl or young woman is pregnant, anemia puts her and her child at special risk, as both need iron for growth and survival. It also increases the risk of adverse maternal and newborn outcomes such as miscarriages, stillbirths, prematurity, and low birth weight.[89]

The United States has in recent years elevated the priority it attaches to nutrition in line with the Sustainable Development Goals and revised international malnutrition targets. On April 1, 2016, the UN General Assembly proclaimed 2016–2025 the Decade of Action on Nutrition and called "on governments to set national nutrition targets for 2025 and milestones based on internationally agreed indicators."[90] In 2012, the WHA adopted six global goals, including to reduce the rate of anemia by 50 percent in women of reproductive age by 2025. Reducing anemia can facilitate progress toward the other five global nutrition targets to reduce the prevalence of stunting, wasting, low birth weight, and childhood overweight, and promote exclusive breastfeeding.[91]

Unfortunately, most countries are not on track to reach the anemia target.[92] In the 13 target countries, anemia prevalence ranges from 17 to 58 percent. Only one of the countries, Kenya, is among the countries closest to being on track with respect to anemia targets.[93]

The World Bank estimates that $12.9 billion is needed to meet the global anemia reduction goal by 2025.[94] If the global community, including the United States, was able to make this investment, it would have exceptional impacts. Achieving the 50-percent reduction (from a 2011 baseline prevalence of 29 percent to 15 percent) would lead to 65 million fewer women suffering from anemia, 800,000 child lives saved,[95] and increased economic productivity of $110 billion over 10 years in low- and middle-income countries.[96] Each $1 invested in the set of interventions[97] required to meet the goal (including iron and folic acid supplementation) is estimated to yield $12 in returns.[98]

MALNUTRITION affects one in three people globally and, along with poor diet, is often the largest risk factor for disease in low-income countries.[76] Nutrition is a critical issue in its own right with significant and widespread individual, economic, and societal impacts. *The Lancet* estimates that 45 percent of preventable child deaths are attributable to malnutrition. The issue is complex, as undernutrition, food insecurity, and obesity often occur at the same time and in the same places. Nutrition is also deeply intertwined with other health issues, such as infectious and noncommunicable diseases, family planning, safe pregnancy outcomes, and interventions such as staying and succeeding in school. In recognition of the central importance of good nutrition to the achievement of the Sustainable Development Goals, goal 2 includes a target to end malnutrition in all its forms, including achieving the World Health Assembly targets on stunting and wasting. Indicators in 12 of the 17 goals are directly related to improving nutrition outcomes. Nutrition interventions also are not only very cost effective but such investments can reduce and even eliminate gross domestic product losses resulting from malnutrition, with the return estimated at between $4 and $35 for every $1 invested.[77, 78]

KEY CONSIDERATIONS

Anemia is complex and has multiple causes. Iron supplementation alone may not be enough to reduce anemia rates. There are many underlying causes of malnutrition, including lack of dietary diversity, poor water and sanitation, gender inequality, inadequate education and income-generating opportunities, absence of sufficient social protection and human rights, and insufficient healthcare. Addressing anemia and other forms of malnutrition requires a multisectoral approach.

More needs to be learned about anemia and its associated factors in adolescent girls and young women. Beyond addressing anemia itself, the U.S. government needs to invest in operational research on the nutritional status and behavior of adolescent girls: e.g., what, when, and how they eat in different settings. Research should also address the knowledge gaps in how best to design and implement nutrition programs as part of broader multisectoral efforts and how to evaluate their impact on malnutrition.[99]

Operational research will help identify how different platforms can be leveraged to improve nutrition outcomes for adolescent girls. The challenge and the opportunity is to reach adolescents in truly relevant and meaningful ways that resonate

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"Empowering adolescent girls and young women is not only the right thing to do, but it's the smart thing to do. This report and our recommendations underscore what I saw firsthand when I traveled with the Task Force to Ghana: when you invest in women and families, whole communities thrive. Now more than ever, the United States must maintain its commitment to foreign assistance and global health programs."

with them, equipping this generation with increased knowledge and skills for sustained, improved nutrition. Health clinics and schools will reach some girls but not all. Piloting food-system approaches, education and social protection platforms, and creative marketing and messaging will strengthen the evidence for what works to reach adolescent girls and young women and at what cost. Options include working across sectors with Feed the Future to ensure minimum dietary diversity among adolescent girls in rural areas and the McGovern-Dole Food for Education Program that provides nutritious meals to girls and nutrition education to girls and their parents.

Monitoring progress will be crucial to ensure that the countries are on track to reduce anemia. The SUN Movement Information System should be used for ongoing monitoring and evaluation. It contains dashboards with up-to-date quantitative and qualitative information to track progress. The SUN Movement includes as one of its strategic objectives transparently costing, tracking, and assessing spending on nutrition to make existing resources more effective and mobilize new funding.[100]

The U.S. government needs both a concerted and well-funded effort to address the critical gaps in adolescent nutrition and a focal entity that has the authority to work across agencies and bureaus. The lack of clear ownership and accountability by any one U.S. government agency or office and the absence of strong coordination have created fragmentation of financing, strategic planning, and program implementation. Currently, USAID nutritional technical staff and leadership are spread across three bureaus, reducing the potential for influence, accountability, and effectiveness. Further, there is little consistent and transparent data on funding, program activities, and impact.

Through the Global Nutrition Coordination Plan, the U.S. government has improved accountability. However, the plan must be effectively implemented, which includes prioritization within the Trump administration as well as adequately dedicated resources in both personnel and funding.

METHODS

The priority focus is upon anemia because it profoundly impacts the health of adolescent girls and young women, and the interventions to cor-

VANESSA KERRY

"Investing in the health of a girl or woman is foundational to her success. It requires a comprehensive approach to health from building a skilled health workforce, ensuring quality care for her at all ages, and increasing access to nutrition and education. In turn, she is more likely to be healthy and economically productive, having a lasting impact on her family, community, and country. This report provides a compelling path forward for the current administration to make innovative, sustainable, legacy-building investments."

rect it are exceptionally cost-effective. Achieving the proposed goal is ambitious, but the impact is significant and the return on investment in anemia is $12 for every $1 spent.[101]

Weekly supplementation of 60 mg iron and 0.4 mg folic acid is required to achieve the WHA global anemia goals for nonpregnant women.[102] These supplements can be delivered through schools, community health workers, health facilities, and the private sector as appropriate.[103] The required interventions for pregnant women include micronutrient supplementation delivered for approximately 180 days per pregnancy during antenatal care (also for stunting reduction), in the form of iron and folic acid supplementation and at least one additional micronutrient.[104]

Although the WHO recommends daily iron and folic acid supplementation in countries with anemia prevalence greater than 40 percent,[105] according to the World Bank, weekly supplementation is more feasible than daily supplementation. The unit costs used in this analysis are therefore derived from a weekly model, which was used in the global costing.[106]

Anemia prevalence in women of reproductive age was used to approximate anemia prevalence in the 10- to 24-year-old adolescent girls and young women cohort (nonpregnant and pregnant adolescent girls and young women were included in the calculations). Country-specific anemia prevalence[107] was applied to each target country's adolescent girl and young women population to estimate the total number of anemic adolescent girls and young women.[108] The estimated number of anemic adolescent girls and young women ages 10–17 who are in school and would thus receive school-based delivery was determined by calculating 57 percent (8 of 14 years) of 10- to 24-year-old adolescent girls and young women in each country (which assumes equal numbers of girls at every age within the range) by the net secondary school attendance in each country.[109] For the remaining adolescent

girls and young women not in school, those expected to be anemic was calculated by applying the country's anemia prevalence and using the World Bank's methodology that 70 percent of the out-of-school population would receive iron supplementation through community health services and 30 percent from a nurse or health facility. The target coverage rate of 75 percent of the number of girls in and out of school was used to determine the number of girls who would be targeted in each country.

The World Bank's unit costs for three delivery platforms—school-based program, community health sevices, and health facility or nurse—were used and multiplied by the target number of adolescent girls and young women to determine the individual intervention costs.[110] Where possible, country-specific unit costs were used.[111] For those countries without specific unit costs, the lowest unit cost for the intervention was selected. In addition to the sum of the individual intervention costs by country, overhead costs for capacity development (9 percent), monitoring and evaluation (2 percent), and policy development (1 percent)[112] were added to get the final sum.