**Comments to the Second International Conference on Nutrition (ICN2) Framework for Action from the Global Network for Neglected Tropical Diseases**

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The Global Network for Neglected Tropical Diseases welcomes the opportunity to provide comments and inputs on the Framework of Action.

**3.3 – Health**

Strong health systems can help expand access to deworming treatments among populations living in areas endemic for neglected tropical diseases (NTDs), including more than 870 million children[[1]](#endnote-1) who are at risk for intestinal worm infections[[2]](#endnote-2) and another 240 million people, including pregnant women,[[3]](#endnote-3) who are afflicted by schistosomiasis.[[4]](#endnote-4) In addition to hindering progress towards improved nutrition, NTDs undercut efforts to improve other areas of development, including education, worker productivity, economic growth, poverty and inequality.

The Framework for Action notes that “investment in, and scaling up of, nutrition-specific interventions is required in three key areas: optimal infant and young child feeding, addressing micronutrient deficiencies and improving maternal nutritional status before and during pregnancy.“ (p16)

**Given the severe consequences that Intestinal worm infections (specifically hookworm, whipworm and roundworm) and schistosomiasis (a waterborne parasitic disease) have on these areas, we recommend the following:**

**3.2.1 Delivery of effective nutrition interventions**

1. **Add deworming as a priority action to address wasting (p 16) and ensure that addressing intestinal worms remain included in the priority actions to address stunting (p 17).** Intestinal worms and schistosomiasis are among the underlying causes of stunting [[5]](#endnote-5) and children suffering from these infections face significant growth deficits and cognitive delays. A study in Peru demonstrated that 7-14 month old children burdened by intestinal worms were 84 percent more likely to be stunted.[[6]](#endnote-6) Additionally, a study revealed greater odds of stunting, wasting and anemia among Kenyan children (between the ages of 5 and 18) who were often co-infected with a combination of schistosomiasis, hookworm, or malaria. [[7]](#endnote-7)
2. **Add deworming as a priority intervention to help address anemia in women of reproductive age and pregnant women.** Considering the role that hookworm infections and schistosomiasis play in contributing to blood and iron loss, it is no surprise that they are listed as among the leading causes of anemia worldwide. Prevalence of anemia, including iron-deficiency anemia, is consistently higher among populations with low socioeconomic status, especially in young children and women.[[8]](#endnote-8)

Hookworm infection and schistosomiasis are especially detrimental for women of child-bearing age and pregnant women who have a greater need for iron. In pregnant women, they exacerbate the loss of iron during pregnancy, increasing the likelihood of delivering low birthweight newborns and the risk of child mortality. Furthermore, hookworm and schistosomiasis multiply blood loss during birth, contributing to hemorrhage,[[9]](#endnote-9) [[10]](#endnote-10) [[11]](#endnote-11) a leading cause of maternal death.[[12]](#endnote-12) An estimated 44 million pregnant women worldwide are infected with hookworm at any given time, including up to one-third of all pregnant women in sub-Saharan Africa. Schistosomiasis alone affects 10 million pregnant women in Africa.[[13]](#endnote-13)

**3.3.2 Delivery of health interventions with an impact on nutrition**

1. **Add mention of the role that roundworm infections play in depleting children of Vitamin A (p18).** Roundworm, one of the most prevalent intestinal worm infections, lives in the intestinal tracks of children and robs them of Vitamin A, a micronutrient that is critical for immune function and proper growth.[[14]](#endnote-14) Roundworm competes with children for Vitamin A and, as a result, children living with worms absorb less Vitamin A even after receiving oral supplementation.[[15]](#endnote-15) A study in Nepal, where Vitamin A deficiency and intestinal worms are both prevalent, showed that a serious eye disease leading to blindness, xeropthalmia, was found more commonly in children with roundworms.[[16]](#endnote-16) [[17]](#endnote-17)
2. **Add deworming for women of child bearing age and pregnant women as a priority action for prevention of infection (p 19).**
3. **Under priority actions for prevention of infections, we suggest noting the importance of delivering Vitamin A/and or iron supplementation alongside delivery of deworming treatments.** Preschool-aged children in India who received deworming treatments and vitamin A supplements exhibited a 35 percent greater weight gain, equivalent to an extra two pounds over two years.[[18]](#endnote-18) A study in Vietnam revealed that regular pre-pregnancy deworming and weekly iron-folic acid supplementation reduced the prevalence of low birth weight infants by 40 percent.[[19]](#endnote-19) And, infant mortality rates fell by 41% after pregnant women in Nepal received micronutrient supplements and deworming treatments. [[20]](#endnote-20)

* + 1. **Access to safe water, adequate sanitation and hygiene**

1. **Add mention of the linkages between intestinal worm infections and schistosomiasis, malnutrition and water, sanitation and hygiene.** Inadequate water supply, poor sanitation and lack of hygiene are contributing factors to the spread of NTDs**.** Infants and young children are often exposed to NTD contaminated soil and water during everyday activities, like eating, playing or bathing. Increased use of latrines, regular hand-washing and water supply infrastructure – interventions that address the underlying causes of disease and malnutrition – are associated with reduced risk of intestinal worm infections reduced infections of schistosomiasis.

**About the Global Network for Neglected Tropical Diseases**

The Global Network for Neglected Tropical Diseases is an advocacy initiative of the Sabin Vaccine Institute that works in partnership with international agencies, governments, academic institutions, corporations, non-governmental development organizations and the general public to raise the awareness, political will and funding necessary to control and eliminate the seven most common neglected tropical diseases (NTDs) by 2020. For more information, please visit [www.globalnetwork.org](http://www.globalnetwork.org/).

**About the Sabin Vaccine Institute**

The Sabin Vaccine Institute (Sabin) is a non-profit, 501(c)(3) organization of scientists, researchers and advocates dedicated to reducing needless human suffering from vaccine-preventable and neglected tropical diseases (NTDs). Since its founding in 1993 in honor of Dr. Albert B. Sabin, the developer of the oral polio vaccine, Sabin has been at the forefront of global efforts to eliminate, prevent and cure infectious and neglected tropical diseases. Sabin develops new vaccines, advocates for increased use of existing vaccines and promotes expanded access to affordable medical treatments in collaboration with governments, academic institutions, scientists, medical professionals and other non-profit organizations. For more information, please visit [www.sabin.org](http://www.sabin.org/).

1. This figure includes preschool age children (years 1-4) and school age children (years 5-14). Soil-transmitted helminthiases: number of children treated in 2011. (2013). *Weekly Epidemiological Record*, 88: 145-152. [↑](#endnote-ref-1)
2. Soil-transmitted helminthiases: number of children treated in 2011. (2013) *Weekly Epidemiological Record*, (14), 145-152. Retrieved from http://www.who.int/wer/2013/wer8814.pdf [↑](#endnote-ref-2)
3. Friedman, Jennifer F., et al. (2007). Schistosomiasis and Pregnancy. *TRENDS in Parasitology*, 23 (4), pp. 158-164. [↑](#endnote-ref-3)
4. WHO report indicates 237 million people at risk for schistosomiasis. *Sustaining the drive to overcome the global*

   *impact of neglected tropical diseases: Second WHO Report on Neglected Tropical Diseases*. (2013). Retrieved from

   http://www.who.int/neglected\_diseases/2012report/en/ [↑](#endnote-ref-4)
5. Papier, K, et al. (2014). Childhood Malnutrition and Parasitic Helminth Interactions. *Clinical Infectious Diseases*, [E-publication ahead of print] Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/24704723> [↑](#endnote-ref-5)
6. Gyorkos, T. W., Maheu-giroux, M., Casapía, M., Joseph, S. A., & Creed-kanashiro, H. (2011). Stunting and

   helminth infection in early preschool-age children in a resource-poor community in the Amazon lowlands of Peru.

   *Transactions of the Royal Society of Tropical Medicine and Hygiene*, *105*(4), 204–208. [↑](#endnote-ref-6)
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8. Kassebaum, N. J. (2014). A Systematic Analysis of Global Anemia Burden from 1990 to 2010. *Blood*, The American Society of Hematology, 123: 615-624. [↑](#endnote-ref-8)
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10. Friedman, Jennifer F., et al. (2007). Schistosomiasis and Pregnancy. *TRENDS in Parasitology*, 23 (4), pp. 158-164. [↑](#endnote-ref-10)
11. *Sustaining the drive to overcome the global impact of neglected tropical diseases: Second WHO Report on Neglected Tropical*

    *Diseases*. (2013). Retrieved from http://www.who.int/neglected\_diseases/2012report/en/ [↑](#endnote-ref-11)
12. Maternal Mortality, Fact Sheet Number 348, May 2014. World Health Organization. Retrieved from <http://www.who.int/mediacentre/factsheets/fs348/en/>. [↑](#endnote-ref-12)
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    *Diseases*. (2013). Retrieved from http://www.who.int/neglected\_diseases/2012report/en/ [↑](#endnote-ref-13)
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