NATIONAL DEWORMING DAY (NDD)

FREQUENTLY ASKED QUESTIONS (FAQs) FOR DEWORMING SCHOOL CHILDREN –EVIDENCE BASED

S.No	Questions	Answers
1.	How do people become infected with intestinal worms and what are the most common worm?	Soil-transmitted helminths(STH) are transmitted by eggs present in human faeces which contaminate soil in areas with poor sanitation and hygiene. Transmission can occur when i) eggs that are attached to vegetables are ingested without being carefully cooked, washed or peeled, ii) eggs are ingested from contaminated water sources and iii) eggs are ingested by children who play in contaminated soil.[1]Children typically harbor the highest intensity of infection. The main species of intestinal worms are the roundworm (*Ascarislumbricoides*), the whipworm (*Trichuristrichiura)* and hookworms (*Necatoramericanus* and *Anclyostomaduodenale)*.
2.	What is the prevalence of STH in India?	WHO data indicates that STH is a significant public health concern for India, with 241 million children between the ages of 1 and 14 predicted to be at risk of STH infections.[i] This represents approximately 68% of the world's children in this age group and approximately 28% of all children estimated to be at risk of STH infections globally. State-wide worm prevalence estimates are not available in all states, although plans are to conduct prevalence surveys in all states in the next five years
3.	How Prevalence Survey of STH is conducted?	Prevalence of STH in conducted in the field by collection of stool samples from the school children's and analyzed in laboratories for identification of parasitic ova and prevalence and intensity is measured. The sample design selected gives an estimate of the state wide prevalence and intensity of STH in a particular state. The laboratory analysis is conducted by technical institutes having expertise in parasitology and the study design and analysis of data is done by reputed epidemiological institutes.
4.	How can we prevent the spread of worm infections?	There are several ways to prevent the spread of worm infections by improving hygiene, including: • Washing hands, particularly before eating and after using toilets • Using sanitary latrines • Wearing slippers • Drinking safe and clean water • Eating properly cooked food • Washing vegetables, fruits and salads in safe and clean water • Keeping nails short and clean
5.	What is the effect of STH on the nutritional status of children?	Worms impair the nutritional status of people they infect in multiple ways: • Worms feed on host tissues, including blood, which leads to a loss of iron and protein and often contributes to anemia • Worms can increase the malabsorption of nutrients; roundworm may compete for Vitamin A in the intestine • Some worms can cause a loss of appetite, reducing nutritional intake and physical fitness.

[1] WHO, Soil-transmitted helminth infections., Fact Sheet Number 366, Updated April 2014, retrieved from http://www.who.int/mediacentre/factsheets/fs366/en

		• Some worms can cause diarrhea and dysentery
6.	What are the development and educational consequences of worms in children?	Worms have negative effects on the cognitive and physical development of children. Children with worms are often underweight and have stunted growth. Heavy infections often make children too sick or too tired to concentrate at or even attend school. Long term, children not treated for worms are shown to earn less as adults.
7.	What is the effect of worms on child mortality?	Intestinal worm infections affect child morbidity, *not* mortality. There is not rigorous evidence that suggests that worms affect child mortality but there is ample evidence that worms fundamentally affect the quality of children's lives and negatively impact their access to health, education and livelihoods.
8.	Can Albendazole and iron/folic acid tablets be administered together?	The WHO asserts that periodic deworming can be easily integrated with child health days or vitamin A supplementation programs for preschool-aged children, or integrated with school-based health programs. Additionally, deworming has been prescribed as part of the Weekly Iron and Folic Acid Supplementation program in India and other schoolhealth programs with success already, making the combination cost-effective, safe and easy to administer.
9.	Can STH be eliminated from a country?	STH have been eliminated from several countries including the U.S. and South Korea, as sanitation conditions improved alongside the delivery of treatments. The WHO recommends mass deworming treatment as a mechanism for controlling the public health threat of worms. A study in Kenya is currently underway that is analyzing the epidemiological requirements, cost-effectiveness and operational feasibility of breaking STH transmission in the absence of improvements in sanitation and findings will be shared broadly.
10.	What is the evidence base associated with health impacts and deworming?	Findings from rigorous studies related to health impacts include: • Results and data analysis from a systematic review of 14 randomized control trials found that deworming without previous screening marginally improves hemoglobin concentration, which could translate on a public health scale into a 5 to 10% reduction in the prevalence of anemia (Humphrey J., 2009) • A systematic review found that treatment with anthelmintic in moderate and heavily infected populations resulted in increased hemoglobin (Smith, J.L. et al. 2010) • A randomized control trial found that reduced exposure to worm infections improved cognition for children less than one year of age (Ozier 2011) • A cluster randomized control trial found that the provision of deworming treatment as part of child health services resulted in an increase in weight gain of about 10% above expected weight gain when treatments were given twice a year and about 5% for annual treatment. (Alderman et al. 2006)
11.	What is the evidence base associated with education, livelihoods and deworming?	Findings from rigorous studies related to educational/livelihoods impacts include: • A randomized control trial found that school-based mass treatment reduced school absenteeism by 25% and was far cheaper than alternative ways of boosting school participation. (Miguel and Kremer 2004)

		• A longitudinal study showed that the long term benefits of childhood deworming are substantial; young adults randomly assigned to a deworming program as children; work more as adults and earn higher wages (Baird S. et al 2012) • A historical study of hookworm eradication in the Southern United States in the early 1900s found a substantial income and educational gain as a result of the reduction in hookworm infection. (Bleakley 2007)
12.	What is the evidence base for deworming in India?	There are at least two randomized trials in India in the last decade that demonstrate the positive impact of deworming in the country: • A health intervention that provided iron, Vitamin A and deworming drugs to Indian preschool children in the slums of Delhi found a significant gain in child weight and school participation compared to intervention with Vitamin A alone. Absenteeism was reduced by one-fifth in the treatment group (Bobonis et al, 2006) • A cluster randomized control trial in preschool children found that the group treated with 4 rounds of Albendazole showed a greater weight gain as compared to the non-treated group (Awasthi S. et al 2008)
13.	What is theWHO's guidance on deworming?	The WHO recommends preventing and controlling STH-related morbidity through the periodic treatment of at-risk populations living in endemic areas, particularly preschool-age children, school-age children and women of childbearing age (including pregnant women in the second and third trimesters and breastfeeding women). The WHO recommends deworming treatment without previous individual diagnosis to all at-risk people living in endemic areas. Treatment should be given once a year when the STH prevalence in the community is over 20% and twice a year when the STH prevalence exceeds 50%.[2]
14.	What is the treatment to be given to children?	Albendazole is the name of the deworming drug used by the Government of India and is a safe treatment for intestinal worms used across the globe. The recommended dosage for children between the ages of 2 and 19 years is 1 tablet (400 mg) and between the ages of 1 and 2years is ½ (half) tablet (200 mg). For young children the tablets should be broken and crushed and then to be administered with water.
15.	Does the deworming treatment have side effects?	The deworming treatment has very few side effects in children. There may be some mild side effects like dizziness, nausea, headache, and vomiting, all likely due to the worms being passed through the child's body. They will all disappear after some time. Side effects are usually experienced by children with high infections. If symptoms do not go away within 24 hours, or if they are very severe, the child is probably experiencing something unrelated to the treatment and should be taken to the nearest health facility.

[i] WHO PCT Databank: http://apps.who.int/neglected_diseases/ntddata/sth/sth.html

[2] WHO Strategy for Intestinal Worms, retrieved from http://www.who.int/intestinal_worms/strategy/en/