DEWORMING FOR ADOLESCENT GIRLS AND WOMEN OF REPRODUCTIVE AGE

POLICY BRIEF

Expanding the reach and coverage of deworming programmes for soil-transmitted helminthiases and schistosomiasis, leveraging opportunities and building capacities

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More than 500 million adolescent girls and women of reproductive age (including over 100 million pregnant and lactating women) are at risk of soil-transmitted helminth and schistosome infections and require treatment.

The aim of this policy brief is to promote the regular deworming of adolescent girls and women of reproductive age. Its target audience is decision-makers, programme managers and staff of nongovernmental organizations responsible for improving the health of women. The policy brief is in the form of questions and answers, to facilitate understanding.

Damage caused by worms

- Hookworm, whipworm and schistosome infections cause significant blood loss.
- This blood loss is particularly harmful in women because they already lose blood during menstruation and have higher requirements for iron during and after pregnancy.
- Anaemia during pregnancy can increase the risk of low birth weight, newborn mortality and morbidity, stunting and wasting.
- Localization of schistosomiasis on the female genital tract (female genital schsitotomiasis) makes women susceptible to super-infections, causes contact bleeding, and facilitates the transmission of HIV and other sexually transmitted infections (STIs).

Deworming is one of the most cost–effective, and impactful, of all public health interventions and can be safely administered to pregnant women after the first trimester.

Current reach of deworming interventions or programmes

- Most countries in which worm infections are endemic already organize large-scale interventions to provide deworming to preschool and school-age children.
- Few endemic countries organize interventions that include deworming girls in secondary schools. If done, the programming is often sporadic, and many adolescent girls may be missed because they do not attend school.
- Some endemic countries have a policy of including deworming during pregnancy, but this practice is not widespread; most countries do not have a stated policy, nor practice.
- Many adolescents and young women have regularly received deworming during their preschool and school years. They have therefore been protected from the morbidity caused by these parasites in that part of their life and reached adolescence with low levels of soil-transmitted helminth and schistosome infections. However, since they continue to live in the same contaminated environment, they require deworming.

Extending the reach of deworming interventions

- **To all adolescent girls**: by integrating with other programmes targeting this age group, such as human papillomavirus vaccination, iron and folic acid supplementation, and school health and nutrition programmes.
- **To all pregnant or lactating women** attending health clinics during antenatal care and postnatal care.

Question 1: Which parasites are targeted by deworming programmes?

Soil-transmitted helminths and schistosomes are two groups of intestinal or urogenital parasitic worms that infect the poorest populations of the tropics and subtropics, often those living in remote, rural areas, in urban slums or in conflict zones where sanitation is insufficient and the environment is contaminated with human excreta *(1)*.

Question 2: How do these parasites cause morbidity?

The morbidity caused by these worms is proportional to the number of worms in the infected person. The more worms in the person, the higher the risk of blood loss and reduced absorption of nutrients and vitamins. Schistosome infections can also cause granulomas in the bladder, intestine and in the mucosa of the genitals *(2,3)*.

Question 3: Are worm infections harmful for girls and women of reproductive age and their children?

Yes. In girls and women of reproductive age, blood loss exacerbates iron-deficiency anaemia and increases the risk of maternal and infant mortality and low birth weight *(4)*. In addition, chronic and repeated schistosome infections are linked to infertility and the genital manifestations of schistosome disease (female genital schistosomiasis), which can result in vaginal bleeding, nodules in the vulva and pain during sexual intercourse *(3)*. These ulcers, like other genital ulcers, are associated with increased risk of transmission of HIV and other STIs *(5)*.

Question 4: Do these infections also have a negative impact on human development?

Yes. People infected with soil-transmitted helminths and schistosomes suffer diminished nutritional status which stunts growth, impairs cognitive processes, reduces school performance, lowers productivity and decreases wages in adulthood *(6)*. Female genital schistosomiasis also contributes to social stigmatization and mental health challenges. Providing deworming treatment to adolescent girls, women of reproductive age, and children is a basic health right *(7–9)*.

Question 5: Is deworming safe and beneficial during pregnancy and lactation?

Yes, deworming after the first trimester is safe.

WHO has analysed published and confidential unpublished reports of women recieving treatment (either albendazole or mebendazole *(10)* and praziquantel *(11)*) during pregnancy and concluded that there is no increased risk of harm to the fetus.

Yes, deworming after the first trimester is beneficial.

Several studies have also confirmed the benefits of deworming during pregnancy *(12–15)*. A recent study of Demographic Health Survey data reporting on more than 800 000 pregnancies in 58 countries in all regions, showed that deworming resulted in a 15% reduction in the risk of neonatal mortality and a 3–11% reduction in low birth weight *(16)*. In 2018, the disease burden of soil-transmitted helminthiasis and schistosomiasis in women of reproductive age was estimated at approximately 2 million disability-adjusted life years lost *(17)*.

Question 6: Is deworming for soil-transmitted helminthiasis and schistosomiasis recommended for adolescent girls and women of reproductive age?

Yes.

WHO recommends regular deworming as a public health intervention *(8, 18)*:

- for preschool and school-age girls, and non-pregnant adolescent girls and women of reproductive age living in areas endemic for soil-transmitted helminths and schistosomes, deworming with albendazole or mebendazole for soil-transmitted helminths and with praziquantel for schistosomes.
- for all pregnant women, after the first trimester, and for postpartum and lactating women:
  - in areas endemic for soil-transmitted helminths and where anaemia is a severe public health problem: deworming with albendazole or mebendazole; and
  - in areas endemic for schistosomes: deworming with praziquantel.

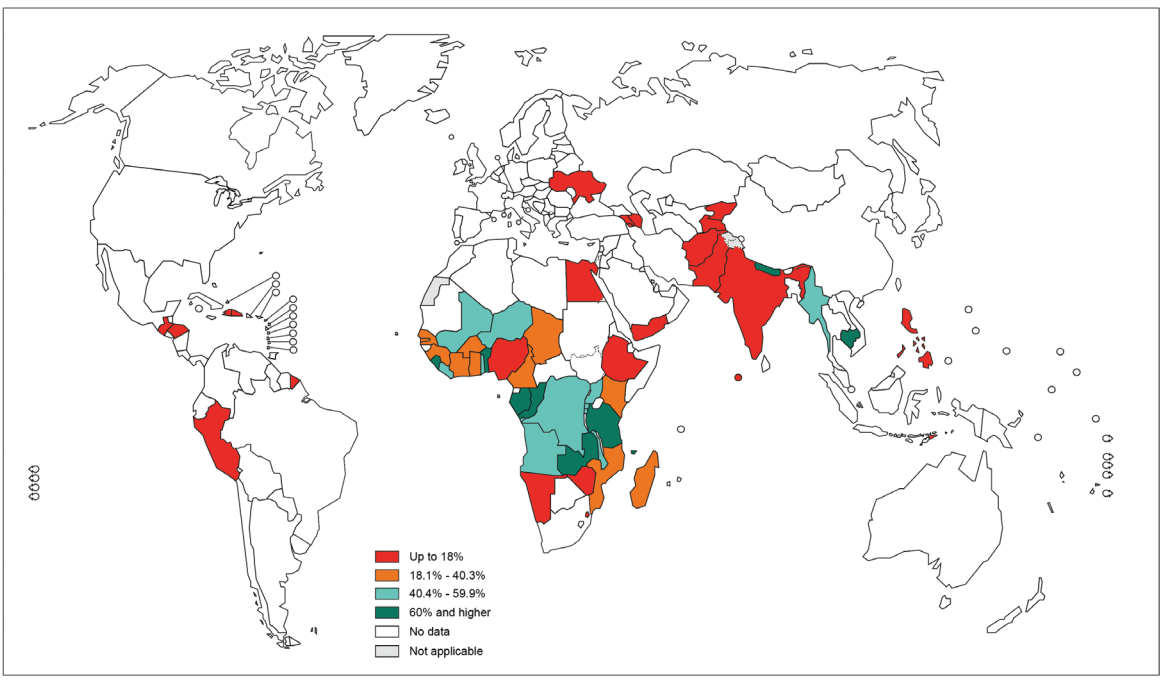
Question 7: What is the current global coverage of deworming programmes?

Global coverage of deworming for preschool and school-age children has increased from 31% in 2010 to 60% in 2019 *(19,20)*, and this coverage should be further increased. Currently, however, programme coverage in women of reproductive age remains low *(14)*: an analysis of Demographic Health Survey data estimated that in 2019 only 23% of pregnant women living in areas endemic for soil-transmitted helminths and schistosomes received deworming tablets (map) *(21)*.

Question 8: What needs to be done to reach girls and women of reproductive age with deworming programmes?

To make the costs of distributing deworming treatment affordable, even in areas with limited resources for health, existing platforms should be maximized to reach adolescent girls and women of reproductive age, such as schools and antenatal clinics, informal training centres, adolescent-friendly clinics and services and educational institutions where the importance of deworming can be incorporated as part of health education. Country examples from Cambodia and Nepal are provided below.

Coverage of postpartum and lactating women with deworming in endemic areas (evaluated in 2019)



Data Source: ICF, 2015. The DHS Program STATcompiler. Funded by USAID. http://www.statcompiler.com. November 20, 2019

Map Production: Control of Neglected Tropical Diseases (NTD)
World Health Organization

World Health Organization

Question 9: Does this intervention have a prohibitive cost?

No. Deworming is safe and cost–effective

Deworming can be delivered to adolescent girls and women at a very low cost (a few cents of US$ if using existing platforms for distribution).

Normally, health systems have detailed information on areas in which soil-transmitted helminths and schistosome infections are endemic in children. In those areas, we can assume (without conducting additional surveys) that adolescent girls and women of reproductive age should also receive deworming.

Health services provide regular antenatal services for pregnant women and postnatal services to follow the growth of the child in the first few years after birth.

The use of existing infrastructure ensures that deworming can be delivered at a very low cost:

- one deworming treatment for soil-transmitted helminthiases (1 tablet of albendazole or mebendazole) costs approximately US$ 0.04 (*22*);
- one deworming treatment for schistosomiasis (on average 3 tablets of praziquantel) costs approximately US$ 0.30 (*22*).

Question 10: Where can managers of control programmes obtain technical support for implementing this intervention?

UNESCO, UNICEF, WFP and WHO and their regional and country offices, as well as partners are available to provide technical support to endemic countries willing to establish a programme to provide regular deworming to adolescent girls and pregnant and lactating women.

Country experiences

Cambodia

Soil-transmitted helminths are endemic countrywide, whereas schistosome infections are endemic in only two provinces (Stung Treng and Kratie). Since 2005, girls and women of reproductive age have received deworming for soil-transmitted helminthiases in routine programme activities implemented through different channels depending on their age: adolescent girls receive deworming at schools (both public and private) by teachers; pregnant and lactating women, and other women, receive deworming through consultations at all public health services and outreach services offered by health centre staff. The deworming coverage of women of reproductive age has increased tremendously, reaching 72% in 2014. Cambodia is a good example of the integration of deworming activities within the health care system. Only government facilities and personnel are authorized to provide deworming treatment in Cambodia *(4)*.

National DHS survey year:	2004	2014
Deworming coverage	11%	72%
Prevalence of iron deficiency anaemia among pregnant women	> 20%	3%

Nepal

Since 2001, Nepal has offered deworming (with albendazole) during pregnancy (after the first trimester) to reduce maternal anaemia in the country.

The table shows an exponential increase in deworming coverage among pregnant women between 2006 and 2016 (as reported in the respective Nepal National Demographic Health Surveys of 2006 and 2016).

A separate survey (the 2016 Nepal national micronutrient status survey) found that pregnant women who had received deworming in the 6 months before the survey had a lower prevalence of anaemia (19%) than pregnant women who had not received deworming in the previous 6 months (34%) *(23)*.

National DHS survey year:	2006	2016
Deworming coverage	20%	69%
Prevalence of iron deficiency anaemia among pregnant women	> 73%	5%