

Public Health Practice

Schistosomiasis: the cleanup continues

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During the past 40 years immense progress has been made in the control of schistosomiasis in China. The authors consider how the 100 million people in the country who are still at risk from the disease can be protected.

In tropical and subtropical areas, schistosomiasis is second in importance to malaria from the socioeconomic and public health standpoints. Caused by blood flukes of the genus *Schistosoma*, the disease is endemic in 74 developing countries (1). Over 600 million people are at risk from it because of poverty, ignorance, and poor housing with little or no sanitation.

Schistosomiasis is acquired through contact with water containing the infective stage of the parasite. In the intermediate host, a snail, the eggs develop into free-swimming cercariae, which enter the human host through the skin or mucous membrane. Neither the eggs nor the cercariae survive for more than a few hours if they do not enter a new host.

Schistosoma, like *Ascaris*, *Entamoeba* and other parasites carried in human excreta,

can be controlled if transmission is reduced. Sustainable reduction in the transmission of *Schistosoma* depends on improved sanitation, the provision of safe water, health education and snail control. Environmental contamination can be prevented if excreta are suitably treated before disposal. The provision of safe drinking-water is particularly important in diminishing contact with the infective stage of the parasite. People should be made fully aware of their role in transmission and of the importance of the use of latrines, especially by children at school.

In China, schistosomiasis is endemic in 118 counties or cities and is under control in 110; this reflects immense progress in comparison with the situation of some 40 years ago, when the disease was endemic in 378 counties or cities. Today, approximately 1.3 million people are infected and about 100 million are at risk, largely because of poor sanitation, inadequate disposal of sewage and refuse, and unsound personal hygiene associated with economic underdevelopment and population growth in rural areas, where per capita incomes are the lowest in the country.

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Whereas in urban areas some 66% of latrines are of the flush type, in rural China as a whole only approximately 2.5% are of this kind, and in the poorest rural areas there are virtually no flush toilets. About 60% of latrines in rural areas are of the dry pit type; in the poorest rural areas, open latrines account for some 13% of the total.

In many low-income communities where schistosomiasis is endemic the installation of a sewerage system is not affordable.

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On-site disposal, involving, for instance, the use of a household latrine with a biogas digester, can provide a satisfactory alternative. The following health and economic benefits of installing such a system at a cost of US\$ 125 have been demonstrated in two villages in an area where schistosomiasis is endemic.

- Human and pig excreta can be collected and treated.
- The biogas can be recovered and used for cooking in the home.

- The supernatant can be used for rearing fish.
- The treated sludge can be used as a fertilizer for fruit trees.

There are also marked differences between urban and rural areas regarding types of water supply. In urban areas, 94% of households have tap water, but the corresponding figure is only 22% in rural areas, where the use of water from springs, wells, rivers and ponds is widespread. About 28% of the water used in rural China is hand-pumped.

Of course, proper assessment of the effectiveness of on-site disposal of excreta and other measures requires information to be gathered on the incidence of schistosomiasis, the morbidity attributable to the disease at community level, predisposition to the disease, and the quantity of eggs in excreta, among other indicators. Furthermore, the economic constraints affecting developing countries where schistosomiasis is endemic merit careful analysis when the feasibility of control is under consideration. ■

1. *Expert Committee on the Control of Schistosomiasis. Second report.* Geneva, World Health Organization, 1993 (WHO Technical Report Series, No. 830).