Schistosomiasis control through rural health units

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In Egypt the main effort in the campaign against schistosomiasis involves providing free diagnosis and treatment through primary care facilities, especially rural health units. The prospects for improving these services are considered below.

Health services in Egypt are provided at the regional (governorate), district (markaz) and village levels. Some 3500 rural health units form the basis of primary health care in rural areas; in 1987 there was one such unit for, on average, 10 595 people. The services given by these units include screening for schistosomiasis and other parasitic diseases. Schistosomiasis is a major health hazard in rural areas of Egypt, and also a global problem, for which there is a cost-effective health intervention package (1).

Rural health units offer outpatient facilities in most of the main villages and some of the satellite villages in the densely settled areas of the Nile Delta and Nile Valley, where nearly everybody lives within 5 km of a unit. Where the smaller settlements lack their own rural health units, those in the main villages provide services. Each rural health unit comprises one or two examination rooms, a pharmacy, a laboratory, and accommodation for a physician and nurses. Patients wait to see the doctor on a covered verandah. Outpatient services are provided daily except on Fridays and official holidays, usually between 8:30 and 13:00.

The supervising doctor in a rural health unit is responsible for its management, the examination of patients, and controlling the supply of medications. From two to four female nurses assist the doctor and provide primary care services. A sanitary, usually male, has regulatory tasks aimed at maintaining hygienic conditions in public places, among them streets and shops, while a health assistant fumigates houses and inspects latrines. A technician performs laboratory tests and collects specimens for analysis. Most professional and semiprofessional staff live in nearby towns, whereas cleaners and guards are more likely to be village residents.

School health visitors liaise with the units, ensuring that sick children receive the attention they need and supervising the screening of schoolchildren for schistosomiasis.

There is no charge for the diagnosis and treatment of schistosomiasis at rural health units. Patients are asked to provide stool and urine specimens for the diagnosis of Schistosoma mansoni and S. haematobium respectively, and those found to be positive are treated orally with praziquantel at a dosage rate of one tablet per 15 kg body weight, taken in the presence of a doctor. No repeat treatment is necessary, but patients are asked to report for retesting after an interval of three months.

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Routine annual testing and treatment are provided for all children attending schools in the units’ catchment areas. The screening programme reaches most children of school age since school registration is compulsory and attendance levels are high in the densely populated parts of the country. At each unit a clerk maintains records of cases of schistosomiasis and other parasitic diseases, thus facilitating the reporting of their incidence to the Ministry of Health and follow-up testing and treatment.

Clearly, these services are curative rather than preventive. Health education teams, organized at district level, visit the units periodically, but require little input from unit staff. Nurses who visit families in the community are primarily concerned with recent births and immunization coverage rather than with educational activities.

In each region and district an endemic diseases unit of the Ministry of Health coordinates schistosomiasis control activities, including health education. The staff who collect and examine vector snails and samples of water from canals are based at district headquarters but report their findings to the regions, which in turn send information to the rural health units. The cleaning of canals and other activities that help to control the snail vectors of schistosomiasis are organized by the Health and Irrigation Directorates at district level and by agricultural cooperatives in the villages. All parts of the health sector are expected to collaborate closely with the rural health units, which are the operational elements at village level.

This structure provides a framework for an integrated schistosomiasis control strategy, as recommended by WHO (2).

**Staff knowledge and performance**

A three-year field study of the coordination of schistosomiasis control policies at the level of the rural health units was conducted in two villages in the Nile Delta (3). The rural health unit in one of the villages was upgraded, the staff were trained, and performance was monitored. The availability of facilities and equipment was investigated by holding group discussions with health staff, whose knowledge and perceptions of the disease were simultaneously revealed.

In the Nile Delta, *S. mansoni* has gradually replaced *S. haematobium* as the dominant species causing schistosomiasis (4), a phenomenon of importance in control because the signs and symptoms differ between the two forms of the disease, as do the diagnostic tools. The health unit we studied focused on the testing of urine specimens for the diagnosis of *S. haematobium* and were neglecting the collection and testing of the stool specimens necessary for diagnosing *S. mansoni*, yet the prevalence rates were >2% and 25% respectively. This led to underestimation of the prevalence of *S. mansoni* and to many cases being unidentified and untreated.

It emerged that health unit staff knew that blood in the urine was the main symptom of *S. haematobium* infection but they were relatively unfamiliar with the less distinctive signs of *S. mansoni* infection. Of the 12 people interviewed, only two remembered having received specific information on the schistosomiasis life-cycle during their general training. Although technicians knew how to perform the sedimentation test on stools as
required by the Ministry of Health and had the necessary equipment, they did not carry out stool examinations on a regular basis. This situation reflected the relative importance of the two species more than a decade previously.

**Schistosomiasis control**

The research team introduced some changes in the protocol for testing schoolchildren, who were asked to provide stool specimens in containers distributed by their teachers, with separate arrangements for boys and girls. Improvements were made in record-keeping and follow-up for regular patients at the health unit, and each patient was given a card to take home.

Nursing staff were offered two training sessions focusing on the diagnosis, signs and treatment of schistosomiasis caused by *S. mansoni*. Technicians were instructed in diagnostic methods and an effort was made to develop their testing skills. Health unit staff were brought into discussions aimed at finding ways of improving the management and organization of the health units. All of these measures helped to heighten performance and morale.

Education and community outreach are essential for the effective utilization of rural health units. The villagers in the study area had only a limited knowledge of schistosomiasis, mostly derived from television publicity. Many, unaware that there were two forms of the disease, expected to be asked to provide only urine specimens when they attended a clinic for diagnosis.

Experience in rural Egypt has shown that health education messages can be delivered by:

- nurses speaking to women who are waiting to see the doctor in a health unit;
- teachers introducing material during discussion classes in schools and summer clubs;
- village women engaging in peer group discussions ($\ddagger$).

The above analysis of opportunities for schistosomiasis control through health units looks primarily at local management, training and community outreach. This view of health care delivery from the periphery gives one the best possible chance of identifying weaknesses and arriving at solutions leading to the provision of more effective and integrated services and more efficient resource use. In the present case, the identification and implementation of strategies for improving service delivery involves closer interaction between staff at the rural health units, school health visitors and schoolteachers, as well as training to improve diagnostic and outreach skills, including the development of a heightened sensitivity to the needs of girls and women. ■

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**References**


5. El Katsha S, Watts SJ. The empowerment of women: water and sanitation initiatives in rural Egypt. Cairo, 1993 (Cairo Papers in Social Science, 16 (2)).