World Health Organization

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Eradication of dracunculiasis

Report by the Secretariat

1. Dracunculiasis is acquired when humans drink water containing tiny copepods (water fleas) that are infected with the larvae of the roundworm Dracunculus medinensis. One year later, the adult female worm, which measures about one meter in length, emerges painfully through the victim's skin, ejecting thousands of larvae into open fresh-water sources, often where people (the definitive host) collect water. In order to survive, the larvae have to be ingested by copepods (the intermediate host). The disease, which severely disables people and prevents them from performing their daily activities (from child care to school attendance and agricultural work) has a profound economic impact on households and communities.

2. As humans are the only reservoir of D. medinensis, the parasite will become extinct once the cycle of transmission from human to human is interrupted. Transmission can be prevented by: (i) early case detection and containment (that is to say preventing infected people from entering water bodies); (ii) providing drinking-water from which copepods have been removed, through such methods as filtering water through finely woven cloth or killing copepods and larvae with a pesticide (temephos) applied to open ponds, or providing safe sources of water such as wells or piped water; and (iii) health education that reinforces all such measures.

3. In 1991, the disease was endemic in 20 countries (Figure 1). The Forty-fourth World Health Assembly, in resolution WHA44.5, declared its commitment to the goal of eradicating dracunculiasis by the end of 1995. Although this goal was not achieved, the reported number of cases decreased by 70%, from about 548 000 cases in 1991 to 130 000 cases in 1995. The partners supporting the eradication of dracunculiasis continued to press for mobilization of support for national eradication programmes and rapid attainment of the goal. In 2004, the number of cases was further reduced to 16 000 in 11 countries (Figure 2),[1] and the Fifty-seventh World Health Assembly, in resolution WHA57.9, urged Member States and partners to continue their commitment to complete eradication by 2009. In the Geneva declaration on guinea-worm eradication, signed during that Health Assembly, the Ministers of Health of the countries remaining endemic for the disease reconfirmed their commitment to eradicate dracunculiasis by 2009.[2]

[1] *Weekly Epidemiological Record*, 2005, **80**(16):165–176.

[2] *Weekly Epidemiological Record*, 2004, **79**(25):234–235.

Figure 1. Countries endemic for dracunculiasis, 1991

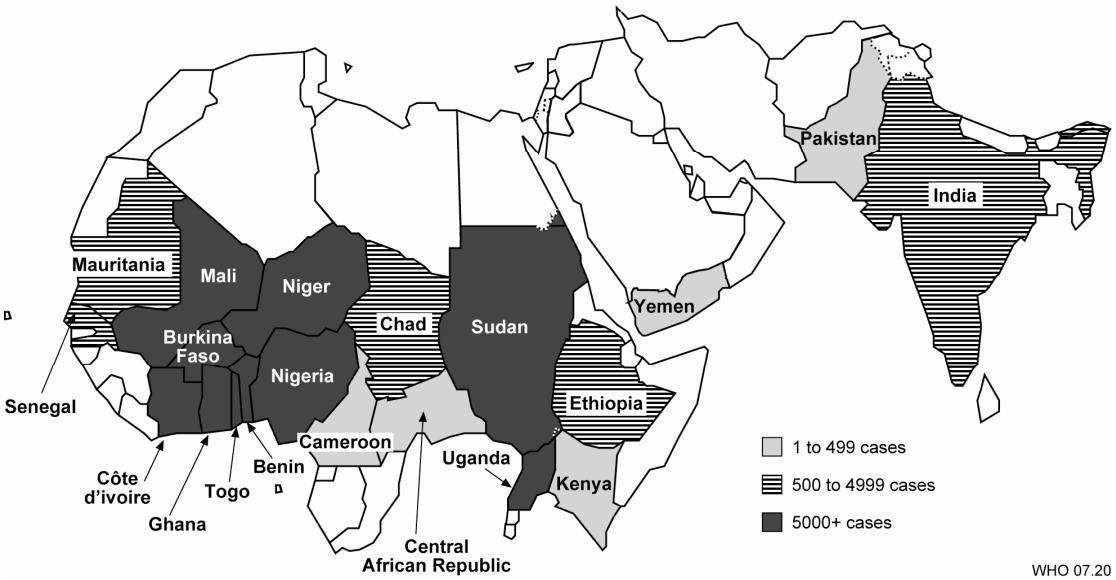
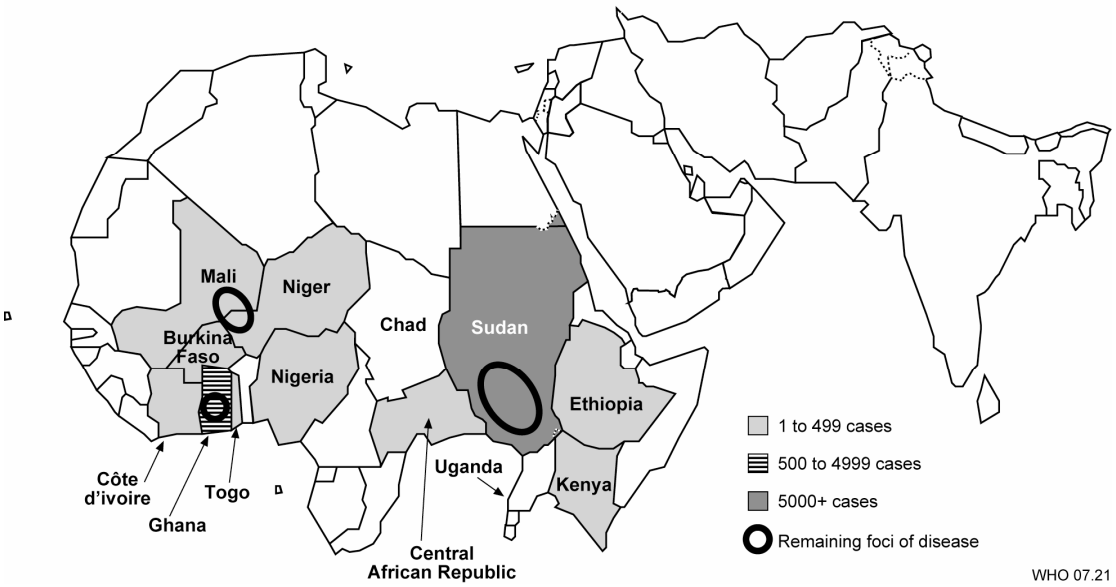


Figure 2. Countries endemic for dracunculiasis, 2006



ISSUES

4. Measures to halt transmission have proven to be fully effective when they are well implemented. Most endemic countries are close to interrupting transmission or have already done so. By the end of 2007, the disease may remain endemic in only seven countries. Between January and September 2007, provisional data show that Ghana and Sudan alone reported 97% of all cases (3192

and 6096, respectively), Mali reported a much smaller number (197), Niger and Nigeria reported together a total of 50 cases, and neither Burkina Faso nor Togo reported any indigenous case. Transmission in all remaining endemic countries occurs seasonally and is now geographically confined to a few districts in Ghana and Mali and parts of southern Sudan. There is thus a new impetus to eradicating dracunculiasis soon.

5. The main prerequisites for eradication are strong political commitment and adequate support (both financial and operational) from national authorities, the international community and partners. The Carter Center, UNICEF and WHO have been the main partners in supporting countries where the disease is endemic.

6. Different issues need to be resolved in each of the three countries with a high or moderate case burden. In Ghana, both surveillance in dracunculiasis-free areas and supervision of interventions need to be reinforced. In Mali, although the number of reported cases is considerably lower, the particular challenges are sporadic insecurity in parts of the endemic area, which itself is remote, and seasonal population movements, both internally and across its borders into Burkina Faso and Niger. The districts still mostly affected in Mali are Ansongo, Gao and Kidal. In Sudan, almost all endemic areas are now accessible following the signing of a comprehensive peace agreement but the size alone of the endemic area presents a challenge. Here, too, there is sporadic insecurity and few communities have safe drinking-water. East Equatoria State reported the highest number of cases of dracunculiasis in 2006 and 2007.

ACTION POINTS

7. Global eradication will depend on the capacity of Ghana, Mali and Sudan to implement the eradication strategy in a sustainable manner and achieve consistent and substantial yearly reductions in the number of dracunculiasis cases. Such high performance will need intensified work and adaptation of the implementation strategies to the local circumstances and disease burden. In northern Ghana, motivation of front-line workers (village-based volunteers and supervisors), effective surveillance to prevent reintroduction of the disease into non-endemic areas, consistent well-implemented interventions including vector control, and restoration of the water-supply system in major towns and villages are required for interruption of disease transmission. In Mali, sporadic insecurity threatens the national eradication effort. Surveillance will need to be strengthened in order to prevent re-introduction of the disease to dracunculiasis-free areas. In Sudan, in addition to existing efforts, accelerated provision of safe drinking-water in villages that are endemic or at risk will contribute to interrupting transmission more rapidly.

8. Successful interventions need real-time monitoring of data on reported outcomes (numbers of cases and of villages that remain endemic or in which new cases are found), close monitoring of the quality of surveillance and performance of implementation, and timely corrective action as necessary. In turn, these activities need close coordination between partners, with specific technical advice in each field situation where progress is insufficient.

9. Intensified work towards eradication needs appropriate resources. Multi-year and flexible financing commitments are required in order to boost implementation in the remaining endemic countries and to meet the increased needs for pre-certification and certification activities over the coming years. It is estimated that a further investment of about US$ 60 million is required to eradicate dracunculiasis.

10. In order to sustain momentum and to encourage the remaining endemic countries to make a special effort to interrupt transmission, annual reports on dracunculiasis eradication should be submitted to the Health Assembly.

ACTION BY THE EXECUTIVE BOARD

11. The Executive Board is invited to note the report.

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