

### MALI - Cholera Epidemic

Date: June 1984 - September 1985

Location: Mopti, Timbuktu, Segou, and Gao regions

No. Dead: 1,022

No. Affected: 4,502

#### The Disaster

The first recognized clinical case of El Tor cholera in Mali was reported in mid-June 1984. Subsequent outbreaks occurred in Gao, Segou, Timbuktu, and Mopti regions, with the highest incidence in the two latter regions. The areas most affected by the epidemic had also suffered from three successive years of drought and famine.

The epidemic peaked by mid-November; however, the number of cases rose to at least 4,502, and the number of deaths to 1,022, as sporadic outbreaks continued through the summer of 1985. In a particularly severe outbreak in the Koro cercle of Mopti region, a total of 479 new cases were reported between May 1 and June 2, 1985. Another 466 cases and 90 deaths were reported in July. Epidemiological investigations revealed that contaminated food and water were largely responsible for the spread of the disease.

#### Action Taken by the Government of the Republic of Mali (GRM)

A local control and treatment program was begun in Gao Region in July, and a national strategy to combat the epidemic was developed in September. The national program required regional physicians to begin curative and preventive measures in any village in which a cholera-like illness had been reported. An attempt was also made to stock treatment supplies in all regions and to require weekly reporting by short wave radio of all new cases and deaths. Logistics and communications problems, however, hampered the delivery of medical assistance as the epidemic spread to less accessible areas.

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Water supplies in central reservoirs were chlorinated and guidelines issued for treating drinking water elsewhere. The GRM began a large-scale immunization program in October, distributing vaccine by mobile health teams to areas thought to be at risk. The Mali Minister of Health launched an international appeal for assistance on October 9 and identified needed supplies for continuing the national program.

As the epidemic continued into 1985, Mali health officials reevaluated the methods being used to control the disease. On July 6, 1985, the Minister of Health announced major policy changes in the cholera control program. An emergency action program, developed with the assistance of USAID health personnel and emphasizing surveillance and oral rehydration therapy, was to be undertaken for a six-month period. Since a major training effort would be needed to carry out the program, the Minister of Health again sought multi-donor support.

### Assistance Provided by the United States Government

U.S. Ambassador Robert J. Ryan, Jr. determined on November 3 that the cholera epidemic was of such a magnitude that the GRM could not respond adequately without assistance. He authorized the expenditure by OFDA of his \$25,000 disaster assistance authority for the fielding of an epidemiological team and the provision of laboratory supplies and medicines.

A two-doctor team from the Centers for Disease Control (CDC) conducted epidemiologic investigations in Mali from November 8 to December 6. Based on their observation that most deaths could have been prevented with adequate oral rehydration therapy, the team stressed the importance of this treatment in its recommendations. At the same time, the CDC doctors counseled the avoidance of less effective means of control, such as mass vaccinations, except in special circumstances. The team also recommended the implementation of a national program for the treatment of all diarrheal illnesses and the designation of one person as national coordinator for cholera surveillance and response in the event of another outbreak.

Travel expenses for the CDC physicians and the cost of laboratory equipment to accompany them totaled \$12,475. In addition, OFDA provided a shipment of medical supplies through UNICEF at a cost of \$12,500. The commodities, which arrived in Mali on November 13, included 80,000 packs of oral rehydration salts, 500 liters of Ringer's lactate, and 5,000 disposable needles.

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The USAID Mission also made available three all-terrain trucks and a pick-up truck to assist the delivery of medical supplies to outlying regions. Two health officers investigated the status of the Koro epidemic during an onsite visit in June 1985 and, under the USAID health services project, made major improvements to upgrade the medical infrastructure in the Koro cercle and three other clinics in the area. They also advised local health officials on the best procedures and strategy for dealing with cholera cases.

In response to the GRM's appeal for donor assistance in funding the accelerated cholera program, OFDA provided a Mission allotment on August 8, 1985. Besides assisting the training and medical supervision components of the program, the \$100,000 grant from the Africa Supplemental Appropriation (see "Introduction") helped finance the distribution of materials and the establishment of a two-way radio system in the sparsely populated areas in which cholera and drought were still problems.

Also, in view of the continuing incidence of cholera, OFDA responded to the Mission's request to procure additional laboratory supplies and medical equipment. The shipment, which arrived in Mali on August 19, included sterile swabs and culture tubes, Cary-Blair transport medium, and reusable petri dishes. The cost of the supplies, including air freight, totaled \$11,973 and was funded from the Africa Supplemental account.

TOTAL OFDA funds.....	\$24,975
TOTAL OFDA-administered Supplemental funds.....	\$111,973
TOTAL USG assistance.....	\$136,948

Assistance Provided by U.S. Voluntary Agencies

None reported

Assistance Provided by the International Community

International Organizations

EEC - provided support valued at \$20,000 to a preventive/curative program in Timbuktu; also gave 500,000 fanasil tablets and 500,000 bags of rehydration salts, value not reported.

UNDP - made \$25,000 available to the UNDP/UNDRO representative and WHO/Bamako for the purchase of medicines and logistics support.

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UNDRO - launched an appeal for international relief on behalf of the Mali Minister of Health; provided \$30,000 for medical supplies and logistics support.

UNICEF - gave medicines worth \$10,000 and logistics support valued at \$20,000.

WHO - donated medicines, laboratory and diagnostic material, and fuel, all valued at \$40,000.

Governments

Algeria - two technicians with two injectors and 200,000 doses of vaccine, value not reported

Belgium - \$2,660 for the local purchase of medical supplies and disinfectant

France - airlifted 200,000 doses of vaccine, 40 imojets, 100,000 tablets and 50,000 vials of fanasil, all at a cost of \$54,837; also provided an investigative team

Italy - Ringer's lactate, rehydration salts, and 5,000 sulfamide tablets, with a total value of \$52,630

Switzerland - 100,000 tablets of tetracycline, valued at \$2,500

Voluntary Organizations and Other Private Groups

Association Francaise Volontaires Progres - provided medical supplies valued at \$11,000.

MSF - (France - Belgium) within its ongoing health/nutrition program, engaged five mobile medical teams in preventive and curative action in Timbuktu (supported by EEC contribution); also provided 500,000 ORS packets, value not reported.

Palestine Liberation Organization - provided 25,000 doses of vaccine and seven technicians, value not reported.

TOTAL \$268,627