

## Medicine by John Grauerholz, M.D.

### African health crisis can be overcome

*Emergency measures could supply vaccines immediately, while the infrastructure is put into place to reverse the disaster.*

**A**frica is in process of a biological holocaust which could depopulate the continent by the end of the decade. It is difficult to assess the true magnitude of the situation, but the available information is appalling.

Infant mortality varies between 50 and 200 deaths per 1,000 live births. In the Sahel, half of the children born alive die by the age of five years.

In Zaire, the deadly Acquired Immune Deficiency Syndrome (AIDS) is epidemic and spreading rapidly. The African cases reflect immune suppression from malnutrition and lack of sanitation.

Malnutrition is one of the two major underlying problems which have created this disaster. Lack of grain and high-quality protein has created a situation in which measles has become a deadly disease. This is compounded by the fact that malnourished children do not form effective antibodies when vaccinated.

Malaria, diarrheal disease, and malnutrition account for 75% of infant and child deaths. Malaria kills 1,000,000 children a year in Africa. There are 16,000,000 cases of Falciparum malaria in southern Africa, and 10% of these will die in a given year.

Obviously, reversing the current famine conditions throughout Africa is a first priority. It is also an urgent necessity to assure purification of water and adequate sanitation. Nevertheless, simple measures to vaccinate the population are both effective and inexpensive, and can prevent people dying from diseases such as measles.

The two most important viral diseases in Africa are polio and measles. Vaccines for both these diseases could be produced in quantity for 10¢ to 12¢ a dose. Dr. Albert Sabin is developing a vaccine for measles which could be administered by inhalation rather than injection.

While it will initially be necessary to import the vaccines, the priority should be to set up vaccine production facilities in the countries themselves. These facilities could produce both animal and human vaccines, and are relatively inexpensive to set up. Ideally, they should be established in association with present, or future, veterinary and medical schools. The medical faculties would supervise and provide quality-control, while training the necessary professionals.

The human vaccination program would spill over to an animal-vaccine program. Today, most cattle and swine in Africa are diseased. Not only are some of these diseases transmitted to humans, but they result in low meat yields.

One of the most important animal vaccines would be against rinderpest, which is widely prevalent in African herds and is a serious worldwide animal health threat. Vaccination could eliminate this disease entirely, and the vaccine offers immunity to measles in humans.

The most important disease to vaccinate against is polio, followed by measles, and then DPT (diphtheria-per-tussis-tetanus).

Recent breakthroughs are occur-

ring in the production of a malaria vaccine. While this will not help those already affected, it will be important for protecting the many outside personnel who would be involved in a major economic development effort of the kind required.

The most critical area of intervention other than food is water management for irrigation and sanitation. A great many of the diseases which plague Africa are either water borne, such as shistosomiasis and guinea worm, or water associated, such as malaria.

Numerous attempts have been made to address these problems in the past, and have failed because the projects were partially completed and then funding was curtailed. In Sri Lanka in the 1970s, malaria was almost eradicated and the number of fatalities reduced to zero. At that point, funding was cut, and in two years the number of cases had risen into the millions, and fatalities into the thousands.

Similar problems have occurred with partially completed dams and canals in various parts of Africa. This has been used as a pretext to denigrate such projects and to destroy the hopes of Africans for any significant improvement in their standard of living.

What is required is an overall plan of development and the commitment to see it through. This must consist of two phases.

The first phase is a military-style mobilization to construct large-scale field-type sanitary and transportation infrastructure, combined with emergency medical and food aid. This would be accomplished by military and civilian engineering and construction operations, similar to the World War II SeeBees.

The second phase would include the establishment of indigenous facilities for vaccine and medicine production.