

## In Memoriam

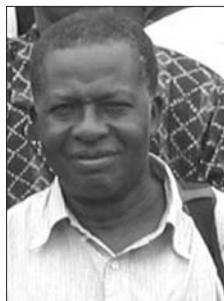


Photo by F. Jacqueroiz

**Aniru Conteh**  
1942–2004

### On the Front Lines of Lassa Fever

Aniru Conteh spent 25 years in his native Sierra Leone dedicated to treating patients with Lassa fever, a rodentborne viral disease, to which he ultimately succumbed on April 4, 2004. Dr. Conteh's life is a model of the dedicated healthcare worker. His colleagues hope that his death can galvanize support for healthcare workers and scientists working on the front lines with Lassa fever virus and other emerging pathogens.

The son of the local chief, Aniru Sahib Sahib Conteh was born in the small village of Jawi Folu in Eastern Province, Sierra Leone, in 1942. When Conteh was 16 years of age, his mother died, and he left school to help support the family in the capitol, Freetown. He eventually returned to school, where he studied chemistry and biology, and earned his bachelor's degree from Durham University, Freetown. After working briefly as a teacher, he enrolled in medical school at the University of Ibadan, Nigeria. He graduated in 1974 and stayed on to work at Ibadan Teaching Hospital. In 1979, Dr. Conteh returned to Sierra Leone, beginning what would be a 25-year career dedicated principally to the fight against Lassa fever.

Lassa fever was first recognized in 1969 after three nurses working at a mission hospital in North-Eastern

State, Nigeria, came down with a mysterious illness (1,2). A new virus was subsequently isolated from a blood specimen sent to the Yale Arbovirus Research Unit and named Lassa after the village of origin of the first case-patient (3). A larger outbreak, 28 cases with at least 14 deaths, occurred in the same region in 1970 (4). Lassa fever was first identified in Sierra Leone in 1972 in a series of nosocomial outbreaks (5,6). The disease was found to be common in the community as well, constituting a major cause of illness and death in eastern Sierra Leone, which prompted the Centers for Disease Control (CDC) to establish a Lassa fever research and control program in Sierra Leone in 1976 (7).

Dr. Conteh willingly plunged into this hotbed of Lassa fever in 1979 when he took a post at Nixon Methodist Hospital in the eastern town of Segbwema, the central hospital of CDC's program. He was named Nixon Hospital's medical superintendent in 1980 and later served as the clinical director of the Lassa fever treatment ward. When civil war broke out in 1991, the treatment ward was moved to the relative safety of nearby Kenema Government Hospital, and Dr. Conteh continued as its director. The war eventually forced the CDC program to close, but Dr. Conteh and the Lassa fever ward carried on through the support of the British medical relief agency, Merlin.

From 1979 to 2004, Dr. Conteh treated thousands of patients with Lassa fever, becoming the unparalleled world's expert on the management of the disease, as well as contributing to research on the subject (8). He persevered despite many risks—outbreaks of Lassa fever, rebel invasions, and government counterattacks. Through various projects and experts, war and peace, and waves of refugees, Dr. Conteh stayed, continuing to treat patients in his characteristically calm and modest manner. His

dedication, skill, and courage were some of the few constants in the unstable and often dangerous world around him.

In March 2004, Dr. Conteh admitted a young, pregnant woman to the Lassa ward with a presumptive diagnosis of severe Lassa fever. The patient was a volunteer nurse on the hospital's pediatric service. On March 17, after numerous unsuccessful attempts by staff members to obtain blood from the patient's arm, Dr. Conteh attempted femoral venipuncture and sustained a needlestick injury in the process. The patient died the next day. On March 23, fever developed in Dr. Conteh. Despite the administration of intravenous ribavirin, profuse vomiting and diarrhea developed a few days later; these led to hypovolemic shock and cardiac arrest, which necessitated resuscitation. Bleeding and renal failure ensued. Consultations were sought and received from medical experts around the world. The diagnosis of Lassa fever was confirmed from specimens sent to the National Institute for Communicable Diseases in South Africa. On April 4, in the cruelest irony, Aniru Conteh died of a virus that he had been combating as a physician for most of his life, a patient in a ward that he had been instrumental in establishing and maintaining.

Dr. Conteh's death represents more than a personal loss. His absence severely undermines the ability to combat Lassa fever, which remains a serious threat. Research over the years has shown that Lassa fever is endemic in Liberia, Guinea, Nigeria, and Senegal as well, and Lassa virus is now believed to infect tens of thousands of people and cause thousands of deaths yearly across West Africa (7,9–13).

What lessons can we learn? What response can we have to this tragedy? We have made progress in our global response to emerging pathogens, but many challenges remain. Perhaps the

most important response is to offer a sound base of support for combating emerging diseases where they start, relying less on the rapid influx of international experts and the long-distance shipping of specimens and more on “home grown” talent, equipped with the tools and training that they need. Achieving these goals will be difficult. Beyond supplying medicine and laboratory equipment, tackling the problem will require addressing such complex issues as low salaries and “brain drain,” civil unrest, corruption, and human rights. Dr. Conteh was exceptional because he persisted in the face of these challenges, but we cannot routinely depend on such heroes. Governments in developing countries, with international support, need to build the base to create stable job and training opportunities, adequate physical infrastructure, and safe working environments to foster the development of local expertise and encourage local physicians and scientists to help fill the role vacated by Dr. Conteh. Ultimately, containing emerging diseases depends on the Aniru Contehs of the world. The more support we provide to people on the front lines, the healthier and safer we all will be.

Aniru Conteh is survived by his wife, Sarah, three sons, and two daughters.

### Acknowledgments

We thank Simon Mardel for his perspectives on this article.

**Daniel G. Bausch,\*  
Sanie S.S. Sesay,†  
and Babafemi Oshinḡ**

\*Tulane School of Public Health and Tropical Medicine, New Orleans, Louisiana, USA; †Kenema Government Hospital, Kenema, Sierra Leone; and ‡Merlin Sierra Leone, Freetown, Sierra Leone

### References

1. Frame JD, Baldwin JM Jr, Gocke DJ, Troup JM. Lassa fever, a new virus disease of man from West Africa. I. Clinical description and pathological findings. *Am J Trop Med Hyg.* 1970;19:670–6.
2. Troup JM, White HA, Fom AL, Carey DE. An outbreak of Lassa fever on the Jos plateau, Nigeria, in January-February 1970. A preliminary report. *Am J Trop Med Hyg.* 1970;19:695–6.
3. Buckley SM, Casals J. Lassa fever, a new virus disease of man from West Africa. 3. Isolation and characterization of the virus. *Am J Trop Med Hyg.* 1970;19:680–91.
4. White HA. Lassa fever. A study of 23 hospital cases. *Trans R Soc Trop Med Hyg.* 1972;66:390–401.
5. Fraser DW, Campbell CC, Monath TP, Goff PA, Gregg MB. Lassa fever in the Eastern Province of Sierra Leone, 1970–1972. I. Epidemiologic studies. *Am J Trop Med Hyg.* 1974;23:1131–9.
6. Monath TP, Maher M, Casals J, Kissling RE, Cacciapuoti A. Lassa fever in the Eastern Province of Sierra Leone, 1970–1972. II. Clinical observations and virological studies on selected hospital cases. *Am J Trop Med Hyg.* 1974;23:1140–9.
7. McCormick JB, Webb PA, Krebs JW, Johnson KM, Smith ES. A prospective study of the epidemiology and ecology of Lassa fever. *J Infect Dis.* 1987;155:437–44.
8. Bausch DG, Rollin PE, Demby AH, Coulibaly M, Kanu J, Conteh AS, et al. Diagnosis and clinical virology of Lassa fever as evaluated by enzyme-linked immunosorbent assay, indirect fluorescent-antibody test, and virus isolation. *J Clin Microbiol.* 2000;38:2670–7.
9. Monath TP, Mertens PE, Patton R, Moser CR, Baum JJ, Pinneo L, et al. A hospital epidemic of Lassa fever in Zorzor, Liberia, March-April 1972. *Am J Trop Med Hyg.* 1973;22:773–9.
10. Bloch A. A serological survey of Lassa fever in Liberia. *Bull World Health Organ.* 1978;56:811–3.
11. Bausch DG, Demby AH, Coulibaly M, Kanu J, Goba A, Bah A, et al. Lassa fever in Guinea: I. Epidemiology of human disease and clinical observations. *Vector Borne Zoonotic Diseases.* 2001;1:269–81.
12. Lukashevich LS, Clegg JC, Sidibe K. Lassa virus activity in Guinea: distribution of human antiviral antibody defined using enzyme-linked immunosorbent assay with recombinant antigen. *J Med Virol.* 1993;40:210–7.
13. Saluzzo JF, Adam F, McCormick JB, Digoutte JP. Lassa fever virus in Senegal. *J Infect Dis.* 1988 Mar;157:605.

Address for correspondence: Daniel G. Bausch, Tulane School of Public Health and Tropical Medicine, Department of Tropical Medicine, SL-17, 1430 Tulane Ave., New Orleans, LA 70112, USA; fax: 504-988-6686; email: dbausch@tulane.edu

### Correction, vol. 10, no. 9

In “SARS-CoV Antibody Prevalence in All Hong Kong Patient Contacts” by Gabriel M. Leung et al., errors occurred on p. 1654. The seventh sentence read “those who declined testing” but should have been “those who consented to testing.”

The corrected sentence reads as follows: However, those who consented to testing were more likely to report more frequent contact and closer relationships with SARS patients, more febrile or respiratory illness episodes since February, and a travel history to SARS-affected regions, which may have biased our seroprevalence estimate upwards.

The corrected article appears online at <http://www.cdc.gov/ncidod/EID/vol10no9/02-0155.htm>

We regret any confusion these errors may have caused.

**EID**  
Online  
[www.cdc.gov/eid](http://www.cdc.gov/eid)