

# Fighting Infectious Diseases in West Africa

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## Japanese Support for an Advanced Research Facility

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West Africa is constantly fighting against infectious diseases. Malaria, for example, causes more than 10,000 deaths a year in Ghana, and the country has around 270,000 people with the human immunodeficiency virus (HIV). In order to promote the sustained development of this region, it is necessary to fight and overcome these diseases. And since the infectious diseases of this region are repeatedly mutating and developing new routes of infection, it is essential to conduct a steady, long-term campaign against them locally, including activities to detect and promptly analyze viruses.

Bacteriologist Dr. Hideyo Noguchi was a pioneer Japanese researcher who conducted work on site in this region. He commenced his studies on yellow fever at a hospital in Accra, Gold Coast (now Ghana), in 1927, and he achieved numerous noteworthy results, including the discovery of the pathogen for yellow fever, before he was infected with the disease six months later and died there. For those accomplishments, he was nominated three times for a Nobel prize. In 1968 the government of Ghana requested Japan, Dr. Noguchi's home country, to assist in medical research on infectious diseases. The Japanese government responded by launching a program of technical cooperation that same year. In 1979 the Noguchi Memorial Institute for Medical Research (NMIMR), named in honor of Dr. Noguchi, was established in Accra with grant aid from Japan, and since then Japanese researchers have been dispatched to this institute on an ongoing basis.

Researchers at NMIMR, while coping with frequent blackouts and inconsistent water supply, have been able to produce numerous successful results. One major field for research has been HIV, and in 1986 researchers in Ghana became the first to discover HIV-2, a strain of the virus concentrated in Africa. The institute has now firmly established itself as a key base for contagious disease research in West Africa.

Handling pathogens like HIV requires highly secure facilities. In 1999 NMIMR completed a research laboratory facility that meets the biosafety level 3 (BSL-3) standard of the World Health Organization (WHO). Because of this, in 2014 the institute was recommended by the WHO as one of the most critical institutions contributing to the fight against Ebola virus disease. And it supported work not just within Ghana but also in tandem with other West African countries on measures to deal with Lassa fever, which showed signs of an outbreak this year.

NMIMR's staff of 334 people includes 49 researchers from Ghana, other African countries, Japan, and elsewhere around the world, including France and the United States. Dr. Mitsuko Ohashi, a Japanese parasitologist who has been working at the institute for seven years, notes, "The researchers have high potential. The levels of personnel and research at NMIMR are world-class, and together we are producing results by serving as members of a team where we are improving ourselves through friendly rivalry."

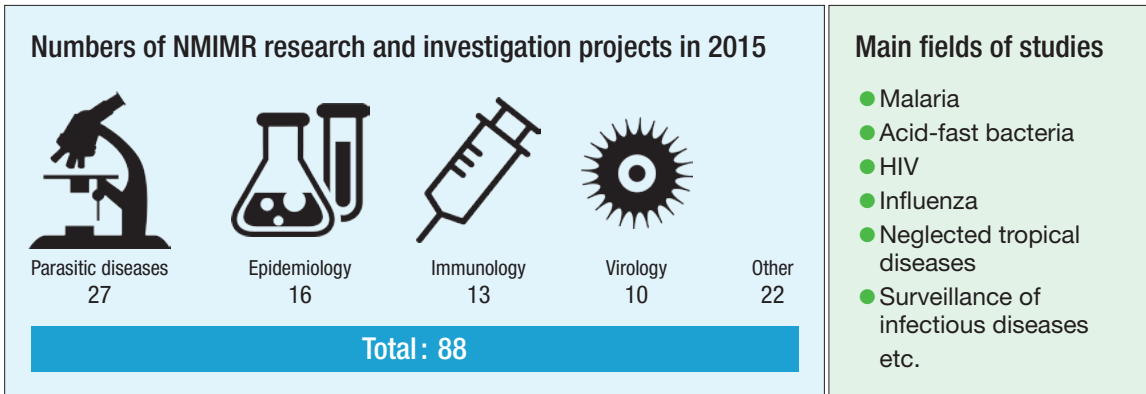
In order to further strengthen the capacity of Ghana and West Africa as a whole to fight infectious diseases, the Japanese government has decided to provide grant assistance for the construction of a new facility at NMIMR, the Advanced Research Center for Infectious Diseases, scheduled for completion in August 2018. This center will enable even more precise detection and surveillance of pathogens with a BSL-3 compliant molecular biology lab with the latest devices. It is hoped that this will serve as a base for medical research and education for future researchers, thus helping to control the diseases that threaten humankind.



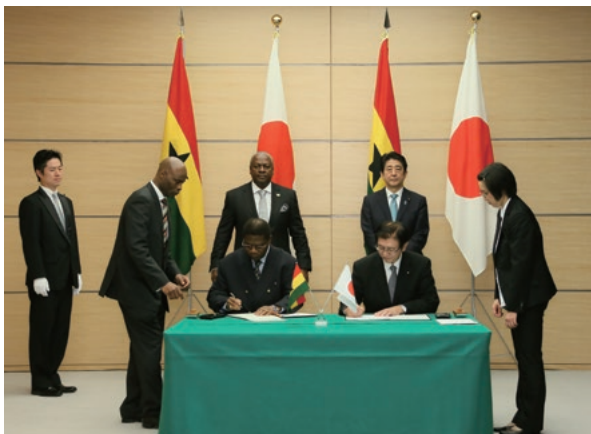
photo : Aiko Iizuka/JICA (1, 2, 3)



1. The Noguchi Memorial Institute for Medical Research (NMIMR), located in a suburb of Accra, Ghana's capital, serves as a center for the fight against infectious diseases in West Africa. 2. Young researchers at the institute, about 70% of whom are close to earning doctorates, pursue their studies under the guidance of supervisors and fellows. 3 & 4. Dr. Hideyo Noguchi (1876–1928), despite poverty and physical impairment, became a globally renowned bacteriologist for his research on diseases including yellow fever and syphilis, and he was nominated for the Nobel Prize in Physiology or Medicine. His image is featured on Japan's thousand-yen note.



The number of studies conducted at NMIMR rose from 56 in 2010 to 88 in 2015. The main focus is infectious diseases, but studies have also been conducted on topics such as food safety and climate change.



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5. On May 18, 2016, following a Japan-Ghana summit meeting in Tokyo, the two countries' leaders were present for an exchange of letters concerning grant assistance from Japan to Ghana. 6. Dr. Mitsuko Ohashi of Tokyo Medical and Dental University found the component to develop a drug effective against sleeping sickness made with Ghanaian medicinal herbs. Tokyo Medical and Dental University and NMIMR jointly applied for a patent for it in 2015. The application for an international scientific patent is a first for NMIMR.