

# NIAID International Research Activities FY 2021

## About NIAID

The National Institute of Allergy and Infectious Diseases (NIAID), part of the U.S. National Institutes of Health (NIH), conducts and supports basic and clinical research to better understand, treat, and prevent infectious, immunologic, and allergic diseases. For more than 60 years, NIAID research has led to new therapies, vaccines, diagnostics, and preventive strategies that have improved the health of millions of people in the United States and around the world.

## Countries With NIAID Research Support

In fiscal year (FY) 2021, NIAID supported research activities in 136 countries. Total NIAID international research funding was \$718.2 million.

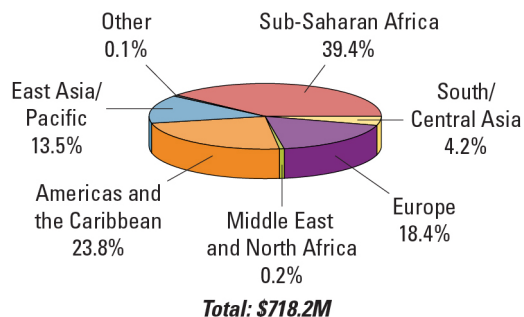


Countries With NIAID-Funded Activities, FY 2021 ( $n = 136$ ) ■

### NIAID-Funded Research: Top 10 Foreign Countries

- |                   |             |
|-------------------|-------------|
| 1. South Africa   | 6. Peru     |
| 2. United Kingdom | 7. Kenya    |
| 3. Uganda         | 8. Thailand |
| 4. Brazil         | 9. India    |
| 5. Canada         | 10. Malawi  |

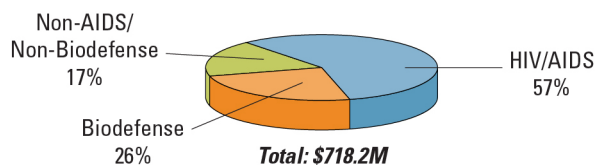
### NIAID Funding by Region



## International Projects

NIAID supported 1,753 international research projects in FY 2021, with 57% of funding invested in HIV/AIDS studies, 26% focused on biodefense-related pathogens, and 17% used for research on other infectious and immunologic diseases.

### Total NIAID International Funding Expenditures



## NIAID Participants in the NIH Visiting Program

In FY 2021, the NIH Visiting Program welcomed 2,010 foreign scientists to conduct research in NIH laboratories. NIAID hosted 243 of these researchers from 52 countries, including Australia, Brazil, Canada, China, Germany, India, Italy, Japan, South Korea, and the United Kingdom.

## NIAID Foreign Delegations and Visitors

NIAID hosted virtual and in-person official delegations and visitors from Australia, Bosnia and Herzegovina, Benin, Brazil, Burkina Faso, Cameroon, Canada, Chile, Colombia, Costa Rica, Cote d'Ivoire, Cuba, Denmark, Ecuador, Israel, Italy, Kenya, Lesotho, Mali, Mauritania, Moldova, Morocco, Mozambique, Norway, Nigeria, Rwanda, Senegal, Sierra Leone, South Africa, South Korea, South Sudan, Togo, and the United Kingdom.

## NIAID Staff Overseas

NIAID had staff posted in Cambodia, Geneva, India, Liberia, Mali, Senegal, South Africa, Uganda, and the United Kingdom in FY 2021.



## Selected NIAID International Programs

The Centers for Research in Emerging Infectious Diseases (CREID) network comprises centers in regions where emerging and re-emerging disease outbreaks are likely to occur.

The COVID-19 Prevention Network (CoVPN) develops and conducts studies to ensure rapid and thorough evaluation of U.S. government-sponsored COVID-19 vaccines and monoclonal antibodies for the prevention of COVID-19.

**Indo-U.S. Vaccine Action Program (VAP)** involves U.S. and Indian scientists in collaborative, jointly funded research focused on tuberculosis (TB), antimicrobial resistance, human immunology, and vaccine and diagnostics development and evaluation.

The **U.S.-Brazil Collaborative Biomedical Research Program** supports collaborative research projects between NIH-supported U.S. scientists and Brazilian investigators funded by the Brazil Ministry of Health.

The **U.S.-Japan Cooperative Medical Sciences Program (USJCMSP)** addresses public health issues in the Asia-Pacific region with U.S. and Japanese funding.

The **U.S.-South Africa Program for Collaborative Biomedical Research** supports research related to TB, HIV, and HIV-associated comorbidities, including cancer and other infectious diseases.

## Selected NIAID-Supported International Advances

A preclinical study to test an experimental antiviral drug called MK-4482 showed that the two treatment groups had 100 times less of the infectious virus than the control group, as well as significantly fewer lesions in the lungs than the control group. MK-4482 is delivered orally, and so could be a beneficial alternative to remdesivir, which must be given intravenously. MK-4482 is now being tested in human clinical trials.

An investigational gene therapy can safely restore the immune systems of infants and children who have a rare, life-threatening, inherited immunodeficiency disorder. Researchers found that 48 of 50 children who received the gene therapy retained their replenished immune system function two to three years later and did not require additional treatments for their condition, known as severe combined immunodeficiency due to adenosine deaminase deficiency, or ADA-SCID. Most participants acquired and retained robust immune

function following gene therapy and were able to stop enzyme replacement therapy and other medications.

The adjuvant Alhydroxiqum-II, a substance formulated as part of a vaccine to boost immune responses and enhance a vaccine's effectiveness, has contributed to the success of the highly efficacious COVID-19 vaccine called COVAXIN, which has been administered to more than 25 million people in India and in other countries. Alhydroxiqum-II was developed in the United States with funding from the NIAID Adjuvant Development Program.

In 2018, severe malaria was responsible for an estimated 405,000 deaths worldwide. Investigators conducted a pooled individual-participant meta-analysis of 14 studies from Benin, Malaysia, Mozambique, Tanzania, The Gambia, Uganda, the United Kingdom, Yemen, and Zambia. The study showed that the risk of severe disease was significantly higher in children and adults who had longer delays between symptom onset to seeking treatment. The findings highlight the importance of improving access to prompt first-line treatment in preventing severe malarial anemia cases and of reducing the need for potentially harmful blood transfusions.

Researchers supported by NIAID discovered that ruhugu virus and rustrela virus are the first known relatives of rubella virus. Findings show that some members of the family *Matonaviridae* can cross substantial barriers between host species and that rubella virus probably has a zoonotic origin. These findings raise concerns about future zoonotic transmission of rubella-like viruses but will facilitate comparative studies and animal models of rubella and congenital rubella syndrome.

## NIAID Office of Global Research (OGR)

OGR facilitates and coordinates NIAID's international activities and collaborative research programs. OGR works closely with other NIH Institutes and Centers, HHS offices and agencies, and numerous foreign government agencies.

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