



## World RePORT

### a database for mapping biomedical research funding

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# World RePORT: a database for mapping biomedical research funding



In response to the 1990s HIV/AIDS pandemic ravaging sub-Saharan Africa, global research funders expanded portfolios in the region and massively increased HIV/AIDS research investments. This support has grown substantially over time but with little coordination amongst funders and without a clear alignment with national priorities and capabilities of African governments.

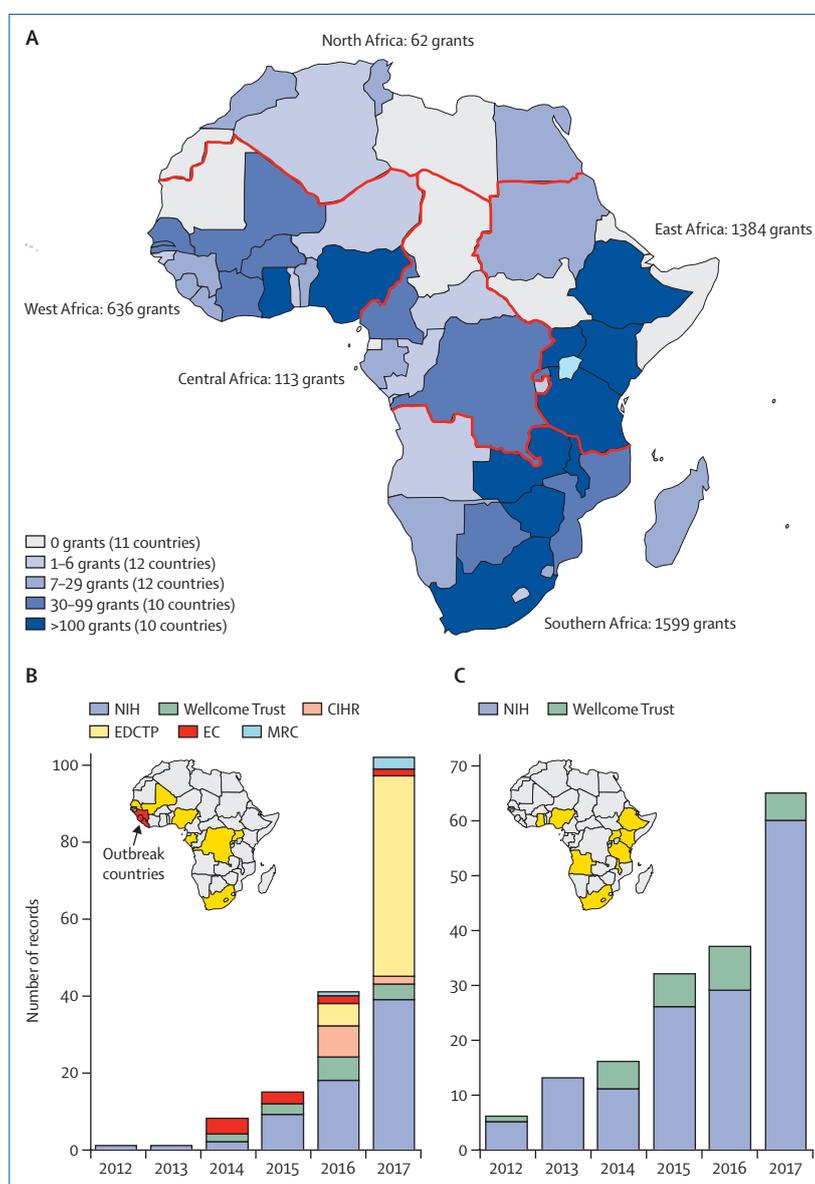
In 2012, an informal group known as the Heads of International Research Organizations recognised the need for a landscape analysis tool that might help optimise and synergise their investments.<sup>1</sup> The result was World RePORT (Research Portfolio Online Reporting Tools)—a searchable, open-access database of funding information, developed and managed by the US National Institutes of Health (NIH). World RePORT displays funding records, mapped to the institutions performing the research, and can display collaborations between multiple research institutions working on a single project. Where available, individual records in World RePORT contain abstract information and a link to the detailed record provided by the research funder. A keyword filter can be used to display the distribution of grants by topic.

Since its debut, World RePORT has matured from a collection of data on direct awards in sub-Saharan Africa into a rich trove of global biomedical research funding data detailing direct awards and research collaborations from a subset of the world's largest funders. By 2017, the database included information from 10 funders and research organisations—the Bill and Melinda Gates Foundation (BMGF), Canadian Institutes of Health Research (CIHR), European Commission, European & Developing Countries Clinical Trials Partnership (EDCTP), UK Medical Research Council (MRC), NIH, Institut Pasteur, Swedish International Development Cooperation Agency, Swedish Research Council, and the Wellcome Trust—with expansion currently underway.

We queried World RePORT Africa data for 2017—the most recent year for which the majority of partners provided their grants information—to assess the current funding landscape. We also used the keyword filter to examine data for 2012–17 for trends in the research funding community's response to the 2014

Ebola epidemic and its growing support for research on non-communicable diseases (NCDs), including sickle cell disease.

For World RePORT see <https://worldreport.nih.gov>



**Figure:** Grants in Africa by region, 2017 (A), and trends in research on Ebola (B) and sickle cell disease (C), 2012–17

Data for 2017 were not available from the Swedish International Development Agency or the Swedish Research Council. All countries shaded in orange and red received funding for research on Ebola during this period; red shading indicates the three 2014 Ebola outbreak countries. Countries shaded in orange received funding for research on sickle cell disease during this period. Only funding institutions with sickle cell disease grant records for 5 or more years are included. NIH=US National Institutes of Health. CIHR=Canadian Institutes of Health Research. EDCTP=European & Developing Countries Clinical Trials Partnership. EC=European Commission. MRC=UK Medical Research Council.

See Online for appendix

For 2017, World RePORT partners awarded 3794 research grants to 1013 institutions, located in 44 of the 55 countries in Africa (figure A). The NIH gave the most awards (60%) followed by the MRC (12%), the Wellcome Trust (11%), and the EDCTP (9%) (appendix p 1). In total, 16 countries received about 90% of all awards and 28 countries split the remaining 10%. 11 countries received no international funding from World RePORT partners. 24 research-intensive institutions each received 25 or more awards in 2017 (appendix p 2), 57 research institutions each received 10 or more grants, and 791 organisations received only one or two grants (appendix p 3). By region, 1384 awards (35%) went to east Africa, 1599 (40%) to southern Africa, 636 (16%) to west Africa, 113 (3%) to central Africa, and 62 (2%) to north Africa. By topic, the most frequently funded grants involved research on three major infectious diseases: HIV/AIDS (49%), tuberculosis (16%), and malaria (10%). Research on NCDs represented about a quarter of all grants, with awards for cancer (14%), mental health (7%), and diabetes (3%) being the most numerous (appendix p 4).

The 2014 west African Ebola virus disease outbreak—in Guinea, Liberia, and Sierra Leone—subsequently spread to several other neighbouring countries and beyond. In 2012, there were only two awards for Ebola research in Africa funded by World RePORT partners and 10 awards for related haemorrhagic fever caused by Lassa and Marburg viruses. By 2016, World RePORT data included 41 Ebola awards in Africa from six partners: NIH, CIHR, EDCTP, Wellcome Trust, European Commission, and MRC. This focus on Ebola continued into 2017, with 102 awards to African institutions in 20 countries. Liberia led with 15 grants, followed by Sierra Leone with 12, Nigeria and Mali with nine each, and Gabon with eight. Of the 102 African grants for Ebola research in 2017, the bulk were funded by EDCTP and NIH (figure B). It should be noted that award definitions used in World RePORT resulted in underreporting of activity by Institut Pasteur and BMGF. The growth in research done in Africa for Lassa and Marburg followed a trend similar to that for Ebola, with 37 African grants underway in 2017.

When the 100th anniversary of the discovery of sickle cell disease was commemorated in 2010, there was little internationally funded sickle cell disease research at African institutions. Ambrose Wonkam and Julie Makani noted the major need for research

to develop therapies for patients with sickle cell disease in all parts of the world.<sup>2</sup> Notably, according to World RePORT data, between 2012 and 2017, there was a robust increase in research, from seven grants to African institutions to 65 grants in nine African countries (figure C). Nigeria led with 30 grants, followed by Ghana with 10, Tanzania with eight, and Kenya with seven. The NIH and the Wellcome Trust were the only funders of research on sickle cell disease in 2017. Similarly, awards to African institutions for other NCDs, notably diabetes and cancer research, increased dramatically over the period 2012 to 2017, with significant clustering of research activity by country and institution (appendix p 5).

World RePORT has some limitations: levels of funding have not been provided by all partners since some cannot easily separate the amounts going directly to the African grantees. BMGF data does not currently identify subawards or collaborations, leading to an under-representation of their portfolio. Further, this analysis is based on the number of records contained in the database, with no effort made to differentiate between small and large grants—eg, a small training grant versus a large multi-year clinical research project. The keyword filter worked well for some major diseases (eg, Ebola, cancer, diabetes, sickle cell disease) but may be less sensitive to other categories (eg, for cardiovascular disease and mental health).

These case studies are just a few examples of the value of World RePORT to governments, academia, the advocacy community, and policy makers. The database is a working pilot and the steering group, comprised of the institutions currently providing funding information, has charted an aggressive development strategy to make this platform sustainable and to allow for data growth and added functionality. The overarching goal remains to help strengthen networks of collaborations on themes of great medical importance to global health research.

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We declare no competing interests.

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The authors are the members of the World RePORT working group.

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- 2 Wonkam A, Makani J. Sickle cell disease in Africa: an urgent need for longitudinal cohort studies. *Lancet Glob Health* 2019; **7**: e1310–11.