

FUNDERS

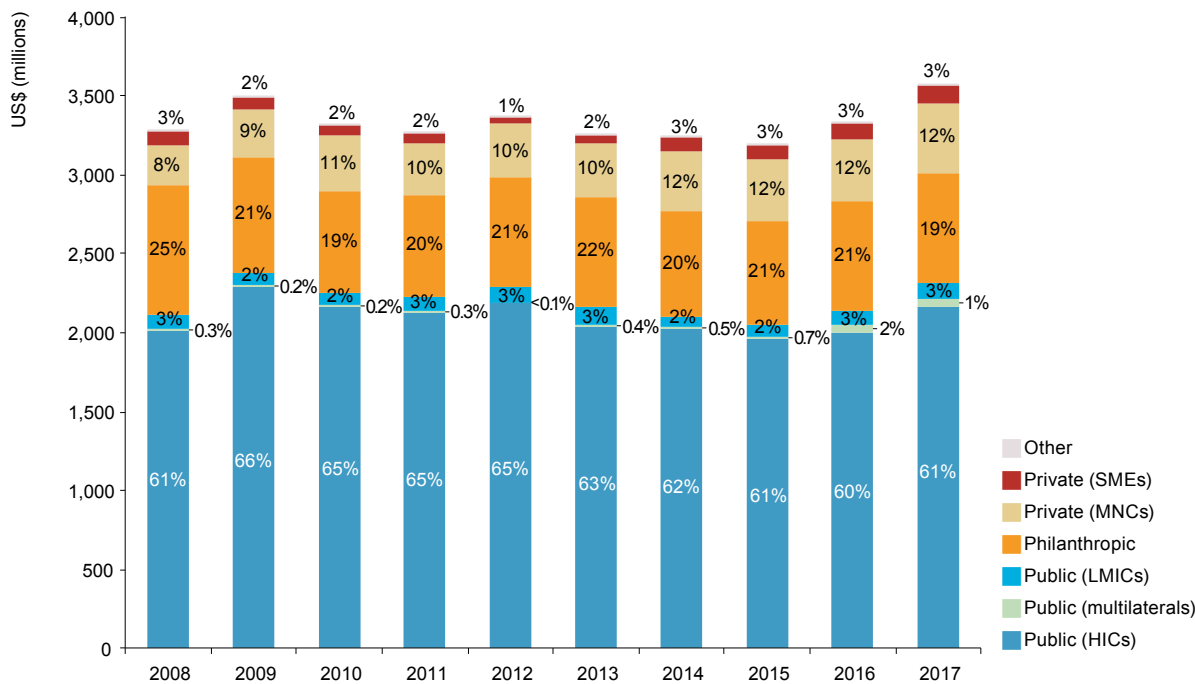
FUNDER OVERVIEW

At \$3,566m, global funding for neglected disease basic research and product development in 2017 reached the highest level ever recorded by the G-FINDER survey. Funding increased by \$232m (up 7.0%) from the previous year, driven by a sharp increase in public funding.

The public sector continued to be the most significant source of funding in 2017, providing almost two-thirds (\$2,318m, 65%) of the global total. The vast majority of this came from HIC governments and multilaterals (\$2,213m, 95%), with the remainder from LMIC governments (\$105m, 4.5%). The philanthropic sector provided \$692m (19%), and industry \$554m (16%) – of which \$445m (80%) came from MNCs, and \$109m (20%) from SMEs.

Public funding increased by \$181m (up 8.5%) in 2017; this was the second year in a row that public funding increased, after several prior consecutive years of declining funding, and was the largest increase in public funding since the fiscal stimulus-driven spending of 2009. Most of the \$181m increase came from HIC governments and multilaterals (up \$165m, 8.0%), but there was also a marked increase in funding from LMIC governments (up \$17m, 19%). Industry investment increased by \$49m (up 9.7%), however this was mostly due to new survey participants. If investment from irregular survey participants is excluded, industry funding was marginally lower overall (down \$9.8m, -2.0%) with small decreases from both MNCs and SMEs. Philanthropic funding was essentially unchanged from the previous year (up \$1.2m, 0.2%).

Figure 19. Total R&D funding by sector 2008-2017



PUBLIC FUNDERS

Globally, the public sector invested \$2,318m in neglected disease basic research and product development in 2017. This was significantly higher than the previous year (up \$181m, 8.5%), representing the largest annual increase in public funding seen since 2009, with almost all public funders either markedly increasing their funding or keeping investment relatively stable.

The US government was once again the largest funder, providing more than two-thirds (\$1,595m, 69%) of all public funding for neglected disease R&D in 2017, followed by the UK (\$186m, 8.0%) and the EC (\$119m, 5.2%). This was down from the three-quarters of public funding that the US provided in 2016, as the slight increase in US government funding (up \$23m, 1.5%) was half that of the EC (up \$40m, 50%), and almost a quarter of that of the UK government (up \$87m, 89%). This led to the smallest ever share of public funding provided by the US, and the largest ever share provided by another public funder – a dramatic reversal from 2016, when the gap between the US and the next largest public funder reached a four year high.

The growth in UK government funding was driven in roughly equal proportions by a sharp increase in funding from DFID (up \$46m, 83%, following a strategic review of its research portfolio), and a new ODA funding stream managed by the Department of Health and Social Care (UK DHSC), which disbursed \$40m in 2017. The increase from the EC was the result of a nearly seven-fold increase in its funding to the EDCTP (up \$47m, 571%). Although this was partly due to abnormally low funding in 2016 related to the scheduling of payments, it was also a record disbursement to EDCTP, reflecting the significantly increased budget of EDCTP2. The slight US increase came in equal parts from the US DOD (up \$12m, 15%), USAID (up \$12m, 16%) and the US CDC (up \$10m, 77%, returning towards normal levels), which offset a small drop in US NIH funding (down \$12m, -0.8%). Other large increases came from India (up \$21m, 38%), driven by increased investment from ICMR (up \$23m, 52%); and Germany (up \$18m, 39%), primarily due to additional funding from the BMBF (up \$12m, 40%) as well as the DFG (up \$5.2m, 44%). Canada (up \$6.2m, 89%) and South Africa (up \$2.7m, 24%) both re-entered the top 12.

Public funding from low- and middle-income countries (LMICs) reached \$105m (up \$17m, 19%), representing its highest share of public funding (4.5%) since 2013. India was responsible for the lion's share of both the total LMIC public funding (accounting for 72%) and the increase in LMIC public funding, while South Africa provided its highest ever level of government funding. This higher share for LMICs was achieved despite a large decrease in Brazilian funding (down \$6.6m, -42%, dropping out of the top 12 in 2017) in the face of deep cuts to overall public spending.

Table 30. Top public R&D funders 2017

Country	US\$ (millions)										2017 % of total
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
United States of America	1,522	1,756	1,666	1,633	1,728	1,537	1,546	1,490	1,572	1,595	69
United Kingdom	88	123	135	109	77	105	109	90	98	186	8.0
EC	126	116	91	108	93	110	109	132	80	119	5.2
India	42	28	43	48	48	57	43	48	55	76	3.3
Germany	3.7	33	36	31	53	43	47	53	47	65	2.8
France	28	46	38	58	52	76	62	62	48	47	2.0
Netherlands	26	26	18	23	15	23	17	5.1	24	24	1.0
Australia	29	26	29	36	46	24	36	21	23	23	1.0
Switzerland	4.7	8.5	15	15	17	17	19	21	18	18	0.8
Japan	7.1	6.0	9.1	3.4	2.6	11	11	13	17	18	0.8
South Africa	4.8	6.9	7.4	6.7	5.4	12	4.1	6.6	11	14	0.6
Canada	26	18	9.3	9.3	18	19	13	9.9	6.9	13	0.6
Subtotal of top 12 [^]	1,982	2,256	2,117	2,103	2,183	2,041	2,023	1,958	2,013	2,198	95
Total public funding	2,118	2,376	2,255	2,225	2,286	2,159	2,106	2,052	2,137	2,318	100

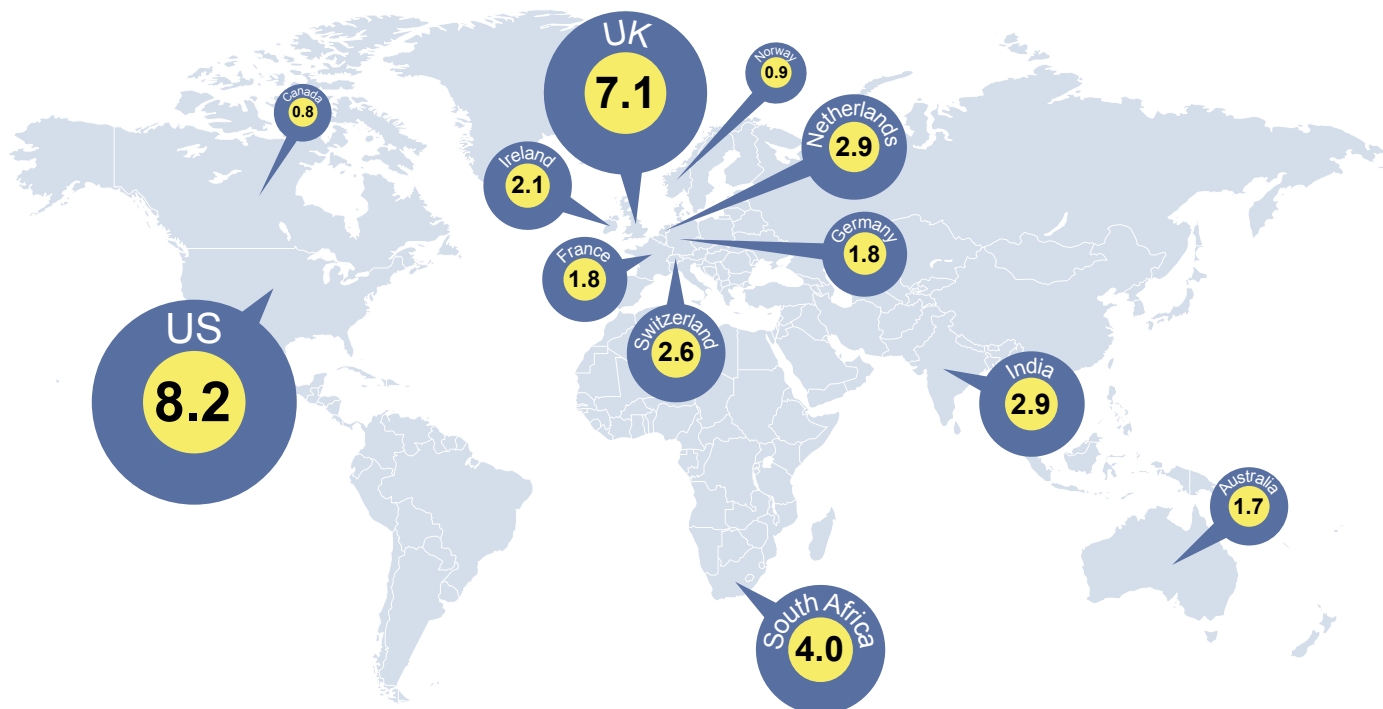
[^] Subtotals for 2008-2016 top 12 reflect the top funders for those respective years, not the top 12 for 2017.

PUBLIC FUNDING BY GDP

Absolute funding can be a misleading measure of public investment in neglected disease basic research and product development, as it can understate the relative contributions of smaller countries and LMICs. For this reason, we also analyse countries' investments in relation to their gross domestic product (GDP).

When analysing by proportion of GDP rather than absolute funding, a slightly different picture of public funding emerges. Two countries not ranked among the top 12 funders by absolute funding are included when the list is instead ranked by contribution relative to GDP: Ireland and Norway. Japan, in contrast, drops out of the list when GDP is factored in, as does the EC (which cannot be fairly analysed with this measure). The US, UK, India, Netherlands, Switzerland, France, Germany, Australia, South Africa and Canada all ranked in the top 12 using either metric. As in 2016, the governments providing the most funding as a percentage of national GDP in 2017 were the US, the UK and South Africa, in that order. Notably, however, both the UK and South African governments recorded their highest ever investment relative to GDP. As a result, this year saw both the smallest ever gap between the US and the second-largest public funder by GDP, and the highest ever funding as a share of GDP provided by an LMIC.

Figure 20. Public R&D funding by GDP 2017^{^*}
(A value of 10 is equivalent to an investment of 0.01% of GDP)



[^] GDP figures taken from International Monetary Fund (IMF) World Economic Outlook database
^{*} Figure provides value of (US\$ funding / GDP) * 100,000

HIGH-INCOME COUNTRIES AND MULTILATERALS

HIC governments and multilaterals once again provided almost all (\$2,213m, 95%) public funding for neglected disease basic research and product development in 2017. More notable than the share of funding was that this was an increase of \$165m (up 8.0%) compared to the previous year, representing the largest increase in HIC government and multilateral funding since 2009. Almost all of this increase came from HIC governments, which either markedly increased or essentially maintained their levels of funding compared to 2016. The largest increase came from the UK (up \$87m, 89%), which was due to additional UK DFID funding and a new funding stream from the UK DHSC. This was followed by further notable increases from the EC (up \$40m, 50%, reflecting an increased budget for EDCTP2), the US (up \$23m, 1.5%), Germany (up \$18m, 39%), and Canada (up \$6.2m, 89%). Funding from all other top HIC governments was essentially flat.

Multilaterals invested a total of \$52m in neglected disease R&D in 2017, representing 2.2% of public funding and 1.4% of total global funding. Although only a marginal increase from 2016 (up \$1.8m, 3.6%), this set a record for the largest contribution from this sector for the fifth year running. Once again, almost all multilateral investment came from Unitaid (\$49m, 95% of multilateral funding).

As in previous years, funding from HIC governments and multilaterals was concentrated on HIV/AIDS, TB and malaria, which collectively received three-quarters (\$1,666m, 75%) of all funding from this sector in 2017. Funding increased for all three of these diseases. The largest increase was for malaria (up \$46m, 16%), about half of which came from UK DFID. This was followed by HIV/AIDS (up \$22m, 2.4%), with an additional \$43m in funding from Unitaid and USAID compensating for a \$24m drop in funding from the US NIH, and then by TB (up \$15m, 4.2%), which in contrast was driven by increased US NIH funding (up \$22m, 10%). These three diseases collectively accounted for just over half of the overall increase in HIC and multilateral funding. Other diseases that saw an increase in funding included helminth infections (up \$12m, 27%), driven by the US NIH and German BMBF; diarrhoeal diseases (up \$8.4m, 15%), mostly to rotavirus and cholera; kinetoplastid diseases (up \$8.3m, 9.0%); and cryptococcal meningitis (up \$4.7m, 83%).

The most notable falls in HIC government and multilateral funding were for dengue (down \$16m, -23%), *Salmonella* infections (down \$12m, -23%) – both largely due to reversions in US NIH basic research funding to long-run average levels – and hepatitis C (down \$11m, -61%), mostly caused by a cyclical drop in Unitaid funding.

More than half (\$1,165m, 53%) of all HIC government and multilateral funding for neglected disease R&D in 2017 was for basic and early-stage research. Less than a third (\$644m, 29%) was explicitly directed to clinical development and post-registration studies, although of the remaining \$404m (18% of total funding) which was not allocated to a specific R&D stage, just over half went to PDPs and the EDCTP, which focus on clinical development.

Table 31. Public (HIC and multilaterals) R&D funding by disease 2008-2017

Disease or R&D area	US\$ (millions)										2017 % of total
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
HIV/AIDS	1,086	1,137	1,058	1,028	1,049	956	964	902	932	955	43
Tuberculosis	233	336	313	287	279	277	313	323	360	375	17
Malaria	258	291	312	290	292	290	288	285	290	337	15
Kinetoplastid diseases	88	104	105	95	92	84	93	83	92	101	4.5
Diarrhoeal diseases	69	106	86	94	88	89	86	74	57	66	3.0
Helminth infections (worms & flukes)	37	53	51	48	60	51	46	43	44	56	2.5
Dengue	44	60	53	59	56	46	51	60	69	53	2.4
<i>Salmonella</i> infections	30	37	39	34	42	41	40	39	53	41	1.8
Cryptococcal meningitis						2.8	5.6	5.6	5.6	10	0.5
Bacterial pneumonia & meningitis	10	13	18	28	17	26	19	17	12	8.7	0.4
Hepatitis C (genotypes 4, 5 & 6)						14	20	12	18	7.0	0.3
Leprosy	4.2	7.1	4.1	4.7	11	6.3	6.0	4.6	5.5	3.5	0.2
Trachoma	1.5	1.4	1.3	1.2	1.6	1.8	1.1	1.0	2.2	2.7	0.1
Buruli ulcer	1.5	1.6	3.8	3.5	3.5	4.1	0.7	0.9	2.3	2.1	<0.1
Leptospirosis						0.4	1.2	1.3	1.3	1.8	<0.1
Rheumatic fever	1.3	1.6	1.9	0.9	1.0	0.9	1.2	1.7	1.3	1.0	<0.1
Platform technologies	6.1	7.9	11	11	27	30	11	16	17	15	0.7
<i>Adjuvants and immunomodulators</i>	0.9	3.1	4.0	1.9	19	17	3.4	3.3	11	7.9	0.4
<i>General diagnostic platforms</i>	2.3	2.2	5.8	8.7	7.6	8.7	6.0	12	5.7	6.6	0.3
<i>Delivery technologies and devices</i>	3.0	2.6	1.2	0.4	0.4	4.2	1.7	0.6	0.3	0.7	<0.1
Multi-disease vector control products										17	0.8
Core funding of a multi-disease R&D organisation	84	64	68	84	67	67	61	79	64	134	6.0
Unspecified disease	66	78	49	71	105	60	34	32	22	28	1.3
Total public funding (HICs/multilaterals)	2,019	2,297	2,173	2,139	2,191	2,047	2,041	1,981	2,048	2,213	100

■ Hepatitis C, cryptococcal meningitis and leptospirosis were added to G-FINDER in 2013. Multi-disease vector control products were added in 2017.

LOW- AND MIDDLE-INCOME COUNTRIES

Public funders in LMICs invested a total of \$105m in neglected disease product development and basic research in 2017, representing 4.5% of all global public funding for neglected disease R&D. This was an increase of \$17m (up 19%) from the previous year, marking the third consecutive year of growth and the second-largest LMIC public investment on record (behind only 2013).

Once again, the vast majority (\$99m, 95%) of all LMIC public funding for neglected disease R&D in 2017 came from just three innovative developing countries (IDCs): India (\$76m, 72%), South Africa (\$14m, 13%) and Brazil (\$9.2m, 8.8%). That LMIC public funding increased despite the introduction of a cap on public spending in Brazil was due to a large increase in Indian government investment (up \$21m, 38%), which was in turn entirely due to additional funding from the Indian ICMR (up \$23m, 52%). South African public funding increased by a quarter (up \$2.7m, 24%), due in equal part to increased funding from the South African DST and the South African Medical Research Council. However it was primarily the drop in Brazilian public funding (down \$6.6m, -42%) that saw the government of South Africa investing more than that of Brazil for the first time. The drop in Brazilian public funding was driven by the Brazilian Development Bank (BNDES, down \$4.8m, -72%) and FAPESP (down \$4.4m, -67%), with Brazil's Department of Science and Technology (DECIT) reporting increased funding (up \$2.8m, albeit from a low base) despite the spending cap. The only two other LMIC governments to report more than \$1.0m in funding in 2017 were Mexico (\$2.1m) and Argentina (\$1.2m).

Funding from LMIC governments remained focused on TB, malaria and kinetoplastid R&D, which once again collectively received more than half of all LMIC funding (\$60m, 58%). Increased investment by the Indian ICMR was the driving force behind the increases in LMIC government funding for malaria (up \$6.2m, 42%) and TB (up \$5.7m, 24%), and meant that the overall decrease in LMIC public funding for kinetoplastid R&D (down \$2.3m, -19%) was much smaller than it otherwise would have been given the Brazilian funding cuts.

LMIC public funding for most other neglected diseases increased in 2017: HIV/AIDS investment doubled (up \$4.9m, 107%), driven by the South African MRC (up \$2.8m, 377%) and Indian ICMR (up \$1.7m, after not having reported HIV/AIDS investment in 2016); leprosy funding increased by \$2.0m (up 47%), entirely driven by the Indian ICMR (up \$1.9m, 47%); funding for helminth infections rose by \$1.5m (up 81%); and dengue investment increased by \$1.4m (up 24%). Funding for diarrhoeal disease R&D dropped (down \$1.3m, -15%), as the Brazilian BNDES, a major funder in 2016, did not report any funding for this disease group in 2017.

A lack of detailed reporting makes analysis of LMIC public funding by R&D stage difficult, with two-thirds (\$66m, 63%) of LMIC funding in 2017 not allocated to a specific product or R&D stage. Where funding was allocated a specific R&D stage, it was largely for basic and early-stage research (\$26m, 25% of total LMIC public funding) rather than clinical development and post-registration studies (\$7.6m, 7.2%).

Table 32. Public (LMIC) R&D funding by disease 2008-2017

Disease or R&D area	US\$ (millions)										2017 % of total
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
Tuberculosis	12	10	12	18	18	35	16	17	24	29	28
Malaria	19	20	11	14	22	22	9.9	14	15	21	20
Kinetoplastid diseases	9.0	9.5	13	10	13	9.1	9.8	9.6	12	9.9	9.5
HIV/AIDS	27	11	19	19	14	19	6.7	6.2	4.6	9.4	9.0
Diarrhoeal diseases	6.5	4.9	7.8	13	5.2	5.8	6.2	6.1	8.6	7.4	7.0
Dengue	3.4	16	8.0	4.4	7.0	3.7	3.5	4.4	5.8	7.2	6.9
Leprosy	6.0	4.2	3.8	2.7	2.3	5.1	3.8	5.0	4.2	6.2	5.9
Helminth infections (worms & flukes)	3.2	1.5	1.3	2.1	3.1	1.9	3.0	2.2	1.9	3.4	3.3
Leptospirosis						-	<0.1	-	1.2	1.4	1.3
Hepatitis C (genotypes 4, 5 & 6)						5.6	0.3	0.8	0.5	0.6	0.5
Rheumatic fever	-	-	-	-	-	-	-	0.7	-	0.2	0.2
<i>Salmonella</i> infections	<0.1	<0.1	0.7	0.5	0.4	0.6	0.7	0.3	0.7	0.2	0.2
Bacterial pneumonia & meningitis	4.7	0.4	0.4	0.1	0.3	<0.1	0.4	<0.1	0.5	<0.1	<0.1
Trachoma	0.2	-	-	-	-	-	-	-	-	-	-
Platform technologies	2.3	-	3.7	0.5	4.9	0.6	0.4	1.4	3.3	1.5	1.4
<i>General diagnostic platforms</i>	0.6	-	1.0	0.5	0.6	<0.1	0.1	0.1	0.9	1.0	0.9
<i>Delivery technologies and devices</i>	1.5	-	2.1	<0.1	4.2	0.5	0.3	1.3	2.3	0.4	0.4
<i>Adjuvants and immunomodulators</i>	0.2	-	0.7	-	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Multi-disease vector control products										3.3	3.2
Core funding of a multi-disease R&D organisation	4.5	0.8	0.9	0.4	-	0.5	0.3	2.8	3.8	2.1	2.0
Unspecified disease	0.7	0.1	-	0.5	4.1	2.5	4.1	0.3	2.5	1.6	1.5
Total public funding (LMICs)	99	79	81	85	94	111	65	71	88	105	100

■ Hepatitis C and leptospirosis were added to G-FINDER in 2013. Multi-disease vector control products were added in 2017.
 - No reported funding

PHILANTHROPIC FUNDERS

The philanthropic sector provided a total of \$692m in funding for basic research and product development for neglected diseases in 2017. Although this was essentially unchanged from the preceding year (up \$1.2m, 0.2%), the philanthropic sector's share of total funding actually fell slightly (to 19%, from 21% in 2016), due to funding growth from the other sectors. This was the sector's smallest share of overall funding for neglected disease R&D since 2010.

Once again, the Gates Foundation and the Wellcome Trust together provided the vast majority of philanthropic funding, accounting for 95% of total funding between them. A slight drop in Gates Foundation spending (down \$11m, -1.9%) was fully offset by additional funding from the Wellcome Trust (up \$2.5m, 2.5%) along with several smaller donors, most notably the Against Malaria Foundation (up \$2.4m, from a low base) and the Dutch National Postcode Lottery (with \$2.0m, after reporting no funding in 2016).

Table 33. Top philanthropic R&D funders 2017

Funder	US\$ (millions)										2017 % of total
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
Gates Foundation	722	655	539	536	531	550	543	550	564	553	80
Wellcome Trust	52	56	66	78	121	112	104	82	99	102	15
MSF	7.0	4.4	4.5	5.0	5.6	5.7	4.6	6.0	11	12	1.7
Gavi	18		2.6		10	19		10	5.9	7.3	1.1
Fundació La Caixa	0.3		0.3	3.3	2.7	3.1		3.6	3.4	5.0	0.7
Against Malaria Foundation									<0.1	2.5	0.4
Dutch National Postcode Lottery										2.0	0.3
Funds raised from the general public	1.5	0.5	0.4	0.6	0.4	0.7	0.9	1.2	1.1	1.5	0.2
TLMI			0.3	0.4	0.4	0.7	0.6	0.5	0.5	0.8	0.1
effect:hope									0.1	0.6	<0.1
Medicor Foundation		0.5	0.8	0.6	0.5	0.7	0.5	0.7	0.4	0.6	<0.1
All other philanthropic organisations	17	20	25	20	23	14	9.8	7.0	5.8	5.8	0.8
Total philanthropic funding	817	737	640	644	696	706	664	661	691	692	100

■ Funding organisation did not participate in the survey for this year. Any contributions listed are based on data reported by funding recipients so may be incomplete.

HIV/AIDS, malaria and TB continued to receive the majority (\$385m, 56%) of all philanthropic funding for neglected disease R&D in 2017, although this was down from 58% (\$402m) in 2016. This was partly due to reduced investment in each of malaria (down \$11m, -7.8%), TB (down \$3.4m, -3.0%) and HIV/AIDS (down \$1.6m, -1.1%), but also to a large increase in the share of philanthropic funding not allocated to a specific neglected disease (up \$29m, 24%).

Non-disease-specific funding represented nearly a quarter (\$153m, 22%) of all philanthropic funding for neglected disease R&D in 2017, more than the sector allocated to any individual disease. The \$33m increase in non-disease-specific funding in 2017 continued a six year period of growth, during which the share of philanthropic funding for this area has increased tenfold. The increase was entirely due to growth in core funding to multi-disease R&D organisations (up \$45m, 63%). This was partially offset by a drop in funding for platform technologies (down \$16m, -48%), which returned to normal levels following a spike in 2016.

As with most changes in philanthropic funding, the 2017 increase in core funding for multi-disease R&D organisations was driven by the Gates Foundation (up \$33m, 132%) and the Wellcome Trust (up \$11m, 30%). In addition to a cyclical increase in core funding for PATH (up \$15m, from a low base), the Gates Foundation's additional multi-disease core funding was mostly due to an initial disbursement of \$19m to the Bill & Melinda Gates Medical Research Institute, which will ultimately have an annual operating budget of approximately \$100m.¹²² The bulk of the Wellcome Trust's increase in core funding was related to a new investment stream to the Africa Health Research Institute (AHRI), which was formed in 2016 following the amalgamation of the KwaZulu-Natal Research Institute for TB-HIV and the Africa Centre for Population Health, and received \$12m in Trust funding in 2017. The Trust's additional core funding to multi-disease R&D organisations whose remit includes HIV/AIDS likely helped to offset its reduced HIV/AIDS-specific funding (down \$7.1m, -64%).

In 2017, 38% of philanthropic R&D funding (\$263m) was directed to basic and early-stage research, while clinical development and post-registration studies continued to receive around a quarter (\$181m, 26%). Remaining funding was divided roughly equally between core funding for multi-disease organisations (\$117m, 17%) – split between researchers and research institutes (72% of core funding), PDPs (18%) and other intermediaries (10%) – and grants not specifying a specific product or R&D stage (\$114m, 17%), with platform technologies receiving the remainder (\$17m, 2.5%).

Table 34. Philanthropic R&D funding by disease 2008-2017

Disease or R&D area	US\$ (millions)										2017 % of total
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
HIV/AIDS	206	156	157	155	163	151	138	133	146	144	21
Malaria	234	246	138	203	174	162	175	142	143	132	19
Tuberculosis	164	126	138	119	124	148	153	146	113	109	16
Diarrhoeal diseases	50	56	55	38	50	64	47	50	57	56	8.1
Bacterial pneumonia & meningitis	32	27	52	41	53	28	7.5	42	26	30	4.3
Kinetoplastid diseases	53	59	32	23	21	20	33	16	26	19	2.8
<i>Salmonella</i> infections	0.9	3.7	7.2	9.4	12	15	11	17	16	18	2.6
Helminth infections (worms & flukes)	30	25	23	30	27	33	30	22	21	17	2.5
Dengue	3.2	3.1	3.2	6.1	5.8	13	22	13	21	8.7	1.3
Leprosy	1.2	1.1	2.7	1.7	2.1	2.1	1.2	1.2	1.3	2.7	0.4
Buruli ulcer	0.2	0.3	1.8	2.4	2.7	2.5	3.1	1.0	0.6	0.8	0.1
Hepatitis C (genotypes 4, 5 & 6)						0.1	0.1	<0.1	<0.1	0.4	<0.1
Cryptococcal meningitis						0.3	<0.1	<0.1	<0.1	0.4	<0.1
Rheumatic fever	<0.1	0.2	0.2	-	-	-	-	-	-	-	-
Trachoma	-	-	-	0.1	0.5	0.4	0.3	0.2	<0.1	-	-
Leptospirosis						<0.1	-	-	-	-	-
Platform technologies	9.8	17	15	7.1	20	15	12	19	33	17	2.5
<i>Adjuvants and immunomodulators</i>	1.6	2.6	5.8	4.0	9.7	5.1	5.2	8.9	7.1	5.9	0.8
<i>Delivery technologies and devices</i>	4.9	6.5	5.3	1.5	0.7	1.7	2.5	5.9	14	5.7	0.8
<i>General diagnostic platforms</i>	3.3	8.0	4.1	1.7	9.5	8.5	3.9	4.2	12	5.7	0.8
Multi-disease vector control products										2.1	0.3
Core funding of a multi-disease R&D organisation	12	6.6	6.1	4.9	39	43	30	48	72	117	17
Unspecified disease	21	8.9	7.7	3.4	2.4	7.9	1.4	11	15	17	2.5
Total philanthropic funding	817	737	640	644	696	706	664	661	691	692	100

■ Hepatitis C, cryptococcal meningitis and leptospirosis were added to G-FINDER in 2013. Multi-disease vector control products were added in 2017
 - No reported funding

PRIVATE SECTOR FUNDERS

The private sector invested a total of \$554m in neglected disease R&D in 2017, accounting for 16% of total global funding. As usual, multinational pharmaceutical companies (MNCs) provided the majority of this investment (\$445m, 80%), with small pharmaceutical and biotechnology firms (SMEs) contributing the remainder (\$109m, 20%).

Total reported private sector investment increased by \$49m (up 9.7%) from 2016, but this was entirely due to significant investment by new survey participants. If funding from all irregular survey participants is excluded, industry investment was actually marginally lower in 2017 (down \$9.8m, -2.0%).

MULTINATIONAL PHARMACEUTICAL COMPANIES

MNCs invested \$445m in neglected disease R&D in 2017, accounting for 80% of total industry investment. Although this was a marked increase from 2016 (up \$45m, 11%), this was entirely due to the inclusion of a new participant in the G-FINDER survey; investment from regularly reporting MNCs was in fact slightly lower (down \$5.9m, -1.5%).

Multinational pharmaceutical companies continued to focus their investment on HIV/AIDS, malaria and TB, with these three diseases once again accounting for more than three-quarters (\$351m, 79%) of all MNC investment. Importantly, this remains the case even without the effect of changes in survey participation, which were the main driver of the apparent increase in HIV/AIDS investment by MNCs (up \$55m, 70%). Without this effect, MNC investment in HIV/AIDS R&D remained relatively steady, as it did for both malaria and TB. The other notable (and real) increase in MNC investment was for diarrhoeal disease R&D (up \$11m, 80%), which rebounded after three years of declining spending, on the back of new investment in vaccines for shigellosis (up \$7.3m, 132%) and rotavirus (up \$3.1m, 58%). The largest decrease in MNC investment was for bacterial pneumonia & meningitis (down \$19m, -91%), which fell steeply following the registration of vaccines for both *Neisseria meningitidis* and *Streptococcus pneumoniae*. MNC investment in dengue R&D also fell (down \$5.8m, -39%).

Clinical development and post-registration studies – essentially all for drugs and preventive vaccines – made up 61% (\$270m) of MNC investment in neglected disease R&D. A further 28% (\$127m) was for early-stage research, almost all for discovery and pre-clinical R&D activities. Remaining MNC investment (\$49m, 11%) was not allocated to a specific product or R&D stage, for example core funding provided to the GHIT Fund.

Table 35. MNC R&D funding by disease 2008-2017

Disease or R&D area	US\$ (millions)										2017 % of total
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
HIV/AIDS	22	19	18	15	15	10	41	49	79	135	30
Malaria	77	78	105	86	100	71	112	136	133	129	29
Tuberculosis	81	118	151	148	131	110	98	94	86	86	19
Diarrhoeal diseases	25	37	34	23	28	39	31	21	14	26	5.8
Kinetoplastid diseases	1.2	3.5	9.3	9.9	17	16	12	16	13	16	3.6
Helminth infections (worms & flukes)	4.7	9.7	3.8	2.6	3.5	8.6	6.9	11	8.0	9.5	2.1
Dengue	3.5	4.4	7.0	11	8.3	7.3	7.4	14	15	9.2	2.1
Hepatitis C (genotypes 4, 5 & 6)						29	27	22	6.9	5.1	1.1
<i>Salmonella</i> infections	1.3	2.0	3.2	5.1	4.2	4.2	3.9	3.5	3.9	2.0	0.5
Bacterial pneumonia & meningitis	33	27	25	33	36	31	32	12	21	1.9	0.4
Leprosy	-	-	-	-	-	<0.1	<0.1	0.7	0.4	0.4	<0.1
Rheumatic fever	1.2	1.7	-	-	-	-	0.2	-	-	-	-
Trachoma	0.1	-	-	-	-	-	-	-	-	-	-
Buruli ulcer	0.1	-	-	-	-	-	-	-	-	-	-
Core funding of a multi-disease R&D organisation	-	-	-	-	-	4.0	10	13	19	24	5.4
Unspecified disease	-	-	-	3.0	1.4	5.7	1.3	0.7	0.6	0.6	0.1
Total MNC funding	249	301	356	336	346	337	384	392	400	445	100

■ New disease added to G-FINDER in 2013.
 - No reported funding

SMALL PHARMACEUTICAL AND BIOTECHNOLOGY FIRMS

SMEs invested \$109m in neglected disease R&D in 2017, accounting for 20% of total industry investment. Although this was a slight increase from 2016 (up \$3.8m, 3.6%), this reflected the inclusion of new participants in the G-FINDER survey; investment from regularly reporting SMEs fell by \$3.9m (-3.9%). Just under two-thirds (\$67m, 62%) of all SME investment came from firms based in innovative developing countries (IDCs), which in 2017 were almost exclusively from India. This was down \$9.8m (-13%) from 2016, with lower investment from both Indian and Brazilian companies.

Bacterial pneumonia & meningitis, *Salmonella* infections and TB remained the focus of SME activity, collectively accounting for two-thirds (\$71m, 66%) of all SME investment in neglected disease R&D in 2017. The largest increase, however, was for HIV/AIDS, with SME investment in this area doubling in 2017 (up \$7.0m, 102%), driven by a near five-fold increase for HIV vaccine R&D (up \$6.2m, 390%). Investment in TB also increased sharply (up \$5.1m, 54%), entirely driven by growing investment in TB diagnostics (up \$5.5m, 108%). The largest drop in SME investment was in diarrhoeal disease R&D (down \$7.7m, -45%), mostly caused by reduced investment in preventive vaccines.

Nearly three-quarters of SME investment (\$77m, 71%) was for clinical development and post-registration studies, the vast majority of which (\$66m, 85%) was for preventive vaccines. Remaining investment was split relatively evenly between early-stage research (\$17m, 15%, around half of which is for vaccines) and funding not allocated to a specific product or R&D stage (\$15m, 14%, primarily for diagnostics).

Table 36. SME R&D funding by disease 2008-2017

Disease or R&D area	US\$ (millions)										2017 % of total
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
Bacterial pneumonia & meningitis	22	9.7	8.2	6.4	5.9	20	19	26	37	35	32
Salmonella infections	13	2.0	0.2	<0.1	0.3	6.4	13	12	22	22	20
Tuberculosis	15	18	18	16	9.5	5.2	8.4	11	9.4	14	13
HIV/AIDS	29	20	15	9.9	7.8	6.5	6.5	8.7	6.8	14	13
Diarrhoeal diseases	2.0	5.5	0.7	5.3	2.8	6.8	9.5	15	17	9.2	8.5
Malaria	10	20	11	7.4	7.3	6.0	6.5	6.8	5.3	5.0	4.6
Helminth infections (worms & flukes)	1.1	0.4	3.6	6.0	0.8	<0.1	9.6	1.0	<0.1	3.2	2.9
Dengue	0.2	1.1	0.6	0.6	0.5	0.3	0.5	1.0	2.5	3.1	2.8
Hepatitis C (genotypes 4, 5 & 6)						-	-	-	3.6	2.3	2.1
Kinetoplastid diseases	1.7	1.1	1.1	3.9	0.8	0.7	6.9	4.6	1.6	0.1	0.1
Leptospirosis						-	-	-	-	<0.1	<0.1
Trachoma	-	-	2.3	4.7	-	-	-	-	-	-	-
Leprosy	-	-	<0.1	0.1	-	-	-	-	-	-	-
Buruli ulcer	0.2	-	-	-	-	-	-	-	-	-	-
Multi-disease vector control products										0.7	0.7
Core funding of a multi-disease R&D organisation	-	-	-	-	-	1.8	5.5	-	-	-	-
Unspecified disease	-	-	-	-	<0.1	-	-	-	-	-	-
Total SME funding	96	78	63	60	36	53	85	85	105	109	100

■ Hepatitis C and leptospirosis were added to G-FINDER in 2013. Multi-disease vector control products were added in 2017.
 - No reported funding

IN-KIND CONTRIBUTIONS

In addition to their direct R&D spend, companies conducting neglected disease R&D incur a range of other costs, such as infrastructure costs and costs of capital. These costs are not included in G-FINDER, due to the difficulty of accurately quantifying or allocating them to neglected disease programmes. G-FINDER also does not include the cost of companies' non-R&D contributions to combating neglected diseases, such as drug donations for mass drug administration programmes.

Companies also provide in-kind contributions that are specifically targeted to neglected disease R&D, but cannot easily be captured in monetary terms. Although difficult to quantify, these inputs are of substantial value to their recipients, and may represent a significant cost to companies.

We note that while some companies have nominated areas where they provide such contributions, others wished to remain anonymous.

Table 37. Typical industry in-kind contributions 2017

In-kind contribution	Examples	Some company donors [^]
Transfer of technology and technical expertise to develop, manufacture, register and distribute neglected disease products	<ul style="list-style-type: none"> Identifying scientific obstacles Sharing best practices and developing systems for clinical, technical and regulatory support Developing capacity for pharmacovigilance Donating equipment 	Eisai GSK Johnson and Johnson MSD Novartis Sanofi Otsuka ViiV Healthcare
Provision of expertise	<ul style="list-style-type: none"> Supporting clinical trials Collaboration of scientists, sharing trial results and facilitating parallel, concurrent testing Participation on scientific advisory or management boards of external organisations conducting neglected disease R&D Providing expertise in toxicology/ADME and medicinal chemistry Evaluating new compounds proposed by external partners Allowing senior staff to take sabbaticals to work with neglected disease groups 	Abbvie Eisai GSK Johnson and Johnson MSD Novartis Sanofi Otsuka ViiV Healthcare
Teaching and training	<ul style="list-style-type: none"> In-house attachments offered to Developing Country trainees in medicinal chemistry, clinical trial training etc Providing training courses for Developing Country researchers at academic institutions globally Organising health care provider training in Developing Country for pharmacovigilance of new treatments Organising conferences and symposia on neglected disease-specific topics 	Abbvie GSK Johnson and Johnson MSD Novartis Sanofi Otsuka ViiV Healthcare
Intellectual property	<ul style="list-style-type: none"> Access to proprietary research tools and databases Sharing compound libraries with WHO or with researchers who can test and screen them for possible treatments Providing public and non-for-profit groups with information on proprietary compounds they are seeking to develop for a neglected disease indication Forgoing license or providing royalty-free license on co-developed products 	Abbvie Eisai GSK Johnson and Johnson MSD Novartis Sanofi ViiV Healthcare
Regulatory assistance	<ul style="list-style-type: none"> Allowing right of reference to confidential dossiers and product registration files to facilitate approval of generic combination products Covering the cost of regulatory filings Providing regulatory expertise to explore optimal registration options for compounds in development 	Eisai GSK Johnson and Johnson Novartis Sanofi ViiV Healthcare

[^] Company donors listed do not necessarily engage in all activities listed as examples of in-kind contributions.

FUNDING BY ORGANISATION

The top 12 funders (including aggregate industry) accounted for 90% of all funding for basic research and product development for neglected diseases in 2017, down only marginally from 91% in 2016. Funding was less concentrated at the very top though, with the top three funders – the US NIH, the Gates Foundation and aggregate industry – only providing 70% of total funding in 2017, down from 74% the previous year and on par with their lowest ever share.

For the second straight year, 9 of the 11 individual organisations in the top 12 (i.e. excluding aggregate industry) increased their funding. This time, however, neither the US NIH nor the Gates Foundation were among the nine. The largest increases came from UK DFID (up \$46m, 83%), following a strategic review of its research portfolio, and the EC (up \$40m, 50%), reflecting the ramp-up of funding for EDCTP2. Other significant increases came from the Indian ICMR (up \$23m, 52%), the US DOD (up \$12m, 15%), USAID (up \$12m, 16%) and the German BMBF (up \$12m, 40%).

The only reductions in funding for neglected disease R&D among the top 12 funders in 2017 were modest, and came from the US NIH (down \$12m, -0.8%) and the Gates Foundation (down \$11m, -1.9%). NIH funding has traditionally served as a bellwether for global neglected disease R&D funding, but 2017 marks the first year in which NIH investment moved against the global funding trend. It also marks the first year that the Gates Foundation's contribution was matched by that of the aggregate pharmaceutical industry.

Table 38. Top neglected disease R&D funders 2017

Funder	US\$ (millions)										2017 % of total
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
US NIH	1,313	1,519	1,463	1,431	1,534	1,340	1,337	1,317	1,404	1,393	39
Aggregate industry	345	379	419	396	382	390	469	477	505	554	16
Gates Foundation	722	655	539	536	531	550	543	550	564	553	16
EC	126	116	91	108	93	110	109	132	80	119	3.4
Wellcome Trust	52	56	66	78	121	112	104	82	99	102	2.9
UK DFID	37	73	80	62	37	60	65	52	55	100	2.8
US DOD	81	110	78	87	85	99	100	75	81	93	2.6
USAID	100	101	103	97	98	85	80	84	74	85	2.4
Indian ICMR	26	20	24	24	25	38	36	36	43	66	1.9
Unitaid	-	-	-	-	0.4	8.8	16	20	48	49	1.4
German BMBF	<0.1	6.7	9.2	8.4	16	15	17	24	31	43	1.2
UK MRC	45	45	51	44	39	41	41	35	41	41	1.2
Subtotal of top 12 [^]	2,896	3,131	2,978	2,937	3,019	2,903	2,954	2,911	3,024	3,200	90
Total R&D funding	3,281	3,493	3,313	3,265	3,368	3,254	3,240	3,191	3,333	3,566	100

[^] Subtotals for 2008-2016 top 12 reflect the top funders for those respective years, not the top 12 for 2017.

■ Funding organisation did not participate in the survey for this year. Any contributions listed are based on data reported by funding recipients so may be incomplete.

- No reported funding