



Global Funding of Innovation for Neglected Diseases: G-FINDER

The fourth G-FINDER survey reports on 2010 global investment into research and development (R&D) of new products for neglected diseases, and identifies trends and patterns across the four years of global G-FINDER data. It covers:

- ▶ 31 neglected diseases
- ▶ 134 product areas for these diseases, including drugs, vaccines, diagnostics, microbicides and vector control products
- ▶ Platform technologies (e.g. adjuvants, delivery technologies, diagnostic platforms)
- ▶ All types of product-related R&D, including basic research, discovery and preclinical, clinical development, Phase IV and pharmacovigilance studies, and baseline epidemiological studies.

G-FINDER is funded by the Bill & Melinda Gates Foundation.

SOME YEAR FOUR HIGHLIGHTS	
\$US 3.06 BILLION	Investment into R&D for new neglected disease products in 2010
-4%	The decrease in year-on-year funding for neglected disease R&D
4	The number of neglected diseases that received less than \$10m each of R&D funding: leprosy, Buruli ulcer, trachoma and rheumatic fever
35%	The percentage increase in neglected disease R&D funding from multinational pharmaceutical companies
-\$US 136 MILLION	The drop in global public funding
8	The number of top 12 government funders that cut investment in neglected disease R&D in 2010
-\$US 47 MILLION	The drop in funding for Product Development Partnerships



Global Funding of Innovation
for Neglected Diseases

Policy Cures is an independent not-for-profit group providing research, information, decision-making tools and strategic analysis for those involved in the creation of new pharmaceuticals for neglected diseases such as malaria, TB, sleeping sickness and helminth infections. Our focus is on providing governments, funders and civil society organisations with the information they need to make optimal research and development (R&D) policy and funding decisions for diseases of the developing world. More information available at www.policycures.org

Executive summary of the G-FINDER report

FINDINGS

Total reported funding for R&D of neglected diseases in 2010 was \$3,063m (\$3,173m in unadjusted 2010 US\$). Repeat survey participants – year-on-year (YOY) funders – reduced their investment by \$109.1m (-3.5%). The effect of the global financial crisis became evident for the first time in 2010, with large funding cuts across all sectors except the pharmaceutical industry.

DISEASE FINDINGS AND TRENDS

In 2010, the three ‘top tier’ diseases – HIV/AIDS (\$1,073m, 35.0%), tuberculosis (TB) (\$575.4m, 18.8%) and malaria (\$547.0m, 17.9%) – again received the lion’s share of global funding for neglected disease R&D (71.7%), although this was a drop from 77% in 2007. Unlike previous years, this was due to decreased YOY funding for the top three diseases (- \$82.5m) rather than to increased funding for the remaining neglected diseases.

Among the ‘second tier’ diseases receiving 1-6% of global funding, dengue and diarrhoeal diseases each received more than 5% of global R&D funding for the second year running. The ‘third tier’ diseases remained underfunded, with leprosy, Buruli ulcer, trachoma and rheumatic fever each receiving less than \$10m.

Bacterial pneumonia and meningitis R&D saw the largest increase in funding in 2010, with YOY funders providing an additional \$31.7m (up 52.9%). A significant increase in funding was also directed towards TB (up \$29.6m, 5.5%). However, these increases were not enough to make up for the large drops in R&D funding for kinetoplastids (down \$15.5, -9.6%), diarrhoeal diseases (down \$18.3m, -10.3%) and malaria (down \$45.5m, -7.8%), although the malaria cut reflected the upcoming conclusion of the RTS,S vaccine programme.

Total R&D funding by disease 2007-2010

Disease	2007 (US\$)	2008 (US\$)^	2009 (US\$)^	2010 (US\$)^	2010 Nominal (US\$)	2007%	2008%	2009%	2010%
HIV/AIDS ^A	1,083,018,193	1,164,882,551	1,138,511,159	1,073,033,520	1,119,699,939	42.3	39.4	35.9	35.0
Tuberculosis ^A	410,428,697	445,927,582	550,853,747	575,361,902	602,741,600	16.0	15.1	17.4	18.8
Malaria ^A	468,449,438	541,746,356	593,860,744	547,042,394	547,199,115	18.3	18.3	18.7	17.9
Dengue	82,013,895	126,752,203	165,812,311	177,643,516	187,384,693	3.2	4.3	5.2	5.8
Diarrhoeal diseases	113,889,118	132,198,981	180,426,679	158,918,128	166,319,515	4.4	4.5	5.7	5.2
Kinetoplastids	125,122,839	139,207,962	162,258,968	147,867,513	150,150,863	4.9	4.7	5.1	4.8
Bacterial pneumonia & meningitis	32,517,311	90,844,284	68,988,629	92,866,038	97,595,712	1.3	3.1	2.2	3.0
Helminths (worms & flukes)	51,591,838	66,837,827	79,414,264	73,685,406	77,070,413	2.0	2.3	2.5	2.4
Salmonella infections	9,117,212	39,486,243	39,378,570	43,982,149	45,417,899	0.4	1.3	1.2	1.4
Leprosy	5,619,475	9,769,250	10,984,756	8,840,532	9,781,822	0.2	0.3	0.3	0.3
Buruli ulcer	2,412,950	1,954,465	1,793,718	5,456,026	5,708,115	0.1	0.1	0.1	0.2
Trachoma	1,679,711	2,073,659	1,798,463	4,507,718	4,740,142	0.1	0.1	0.1	0.1
Rheumatic Fever	1,670,089	2,179,609	3,009,737	1,736,877	1,963,080	0.1	0.1	0.1	0.1
Platform technologies	9,997,190	16,298,026	22,086,907	27,358,501	28,731,884	0.4	0.6	0.7	0.9
General diagnostic platforms	4,791,152	5,253,880	8,612,816	9,374,424	9,943,959	0.2	0.2	0.3	0.3
Adjuvants and immunomodulators	2,685,148	2,215,853	5,587,607	9,168,639	9,651,302	0.1	0.1	0.2	0.3
Delivery technologies and devices	2,520,889	8,828,293	7,886,484	8,815,438	9,136,623	0.1	0.3	0.2	0.3
Core funding of a multi-disease R&D organisation	110,921,673	101,097,348	74,094,564	76,884,279	76,807,824	4.3	3.4	2.3	2.5
Unspecified disease ^A	51,619,120	74,707,997	75,667,744	47,485,474	51,441,520	2.0	2.5	2.4	1.6
Disease total^A	2,560,068,749	2,955,964,344	3,168,940,958	3,062,669,973	3,172,754,136	100.0	100.0	100.0	100.0

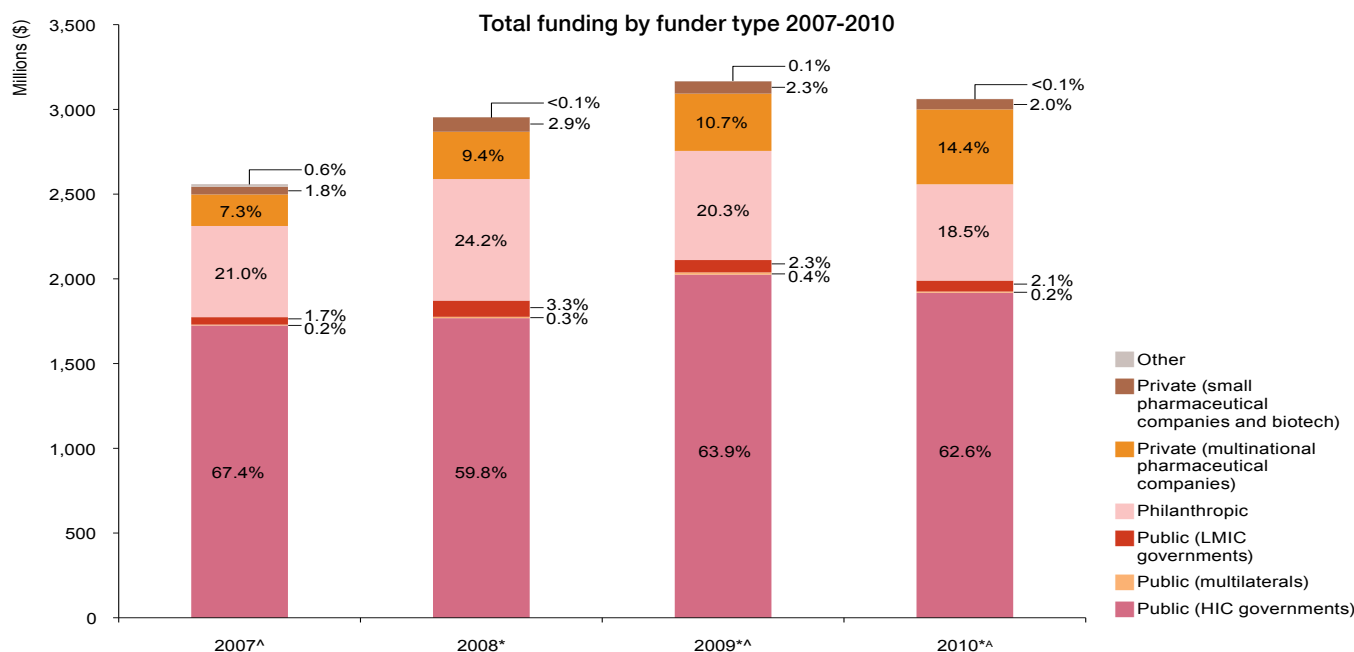
^A Figures are adjusted for inflation and reported in 2007 US dollars

* Figures are in current (2010) US dollars

^A Figures for 2009 have been updated and therefore differ from previously published figures

FUNDERS

The public sector played a key role in 2010, providing almost two-thirds (\$2.0bn, 65%) of global funding. However, in a major change, the philanthropic sector did not play the dominant role seen in previous years, with philanthropic contributions of \$568.1m (18.5%) being closely matched by industry investments of \$503.5m (16.4%).



* Figures are adjusted for inflation and reported in 2007 US dollars

[^] Figures for 2007 and 2009 have been updated and therefore differ from previously published figures

[^] There may be minor under-reporting as some organisations did not submit 2010 data

The effect of the global financial crisis on public sector neglected disease R&D funding became evident for the first time in 2010. Eight of the top 12 government funders (who represent 93.1% of total public funding) cut their neglected disease R&D funding in 2010. The UK was one of the very few countries where public funding for neglected disease R&D increased (up \$21.2m, 14.9%), driven by a \$12.8m (15.2%) increase by the UK Department for International Development (DFID). This funding increase was particularly significant as the majority of other governments cut their YOY funding in 2010, including the European Commission (EC, down \$25.8m, -21.8%), Brazil (down \$20.8m, -65.6%), Sweden (down \$14.2m, -43.0%), the Netherlands (down \$11.2m, -39.1%), Denmark (down \$8.4m, -49.7%), France (down \$7.4m, -15.6%), Canada (down \$7.4m, -43.9%), Spain (down \$5.9m, -29.9%), Germany (down \$4.3m, -12.5%) and Norway (down \$3.5m, -20.0%).

Philanthropic funding also decreased by a substantial \$79.8m (-12.4%) in 2010, mostly due to a \$101.7m decrease in funding from the Gates Foundation as several Foundation-funded products reached maturity. Industry increased its 2010 YOY investment by \$107.3m (up 28.2%) to a total of \$503.5m, entirely due to an increase in MNC investment of \$114.7m (35.1%), which more than offset the halving of YOY funding from small and medium size pharmaceutical companies (SMEs) in Innovative Developing Countries (IDCs, down \$7.0m, -49.9%). Investment by SMEs in the developed world held steady (down \$0.4m, -0.9%).

Top neglected disease funders 2010

Funder	2007 (US\$)	2008 (US\$) [^]	2009 (US\$) [^]	2010 (US\$) [^]	2007%	2008%	2009%	2010%
US NIH	1,064,859,791	1,078,627,652	1,256,471,979	1,211,704,054	41.6	36.5	39.6	39.6
Aggregate industry respondents ^{AB}	231,912,647	365,252,975	411,265,510	503,525,794	9.1	12.4	13.0	16.4
Gates Foundation ^B	452,102,715	616,991,512	557,518,315	455,832,350	17.7	20.9	17.6	14.9
UK DFID	47,565,987	43,278,878	84,396,112	97,229,720	1.9	1.5	2.7	3.2
European Commission	121,366,882	129,899,906	118,311,296	92,529,756	4.7	4.4	3.7	3.0
USAID	80,600,336	83,805,395	84,483,425	85,975,465	3.1	2.8	2.7	2.8
Wellcome Trust	59,985,371	60,864,206	65,121,278	80,459,662	2.3	2.1	2.1	2.6
US DOD	86,914,578	72,548,392	98,236,367	69,942,925	3.4	2.5	3.1	2.3
UK MRC ^B	51,716,968	52,765,367	51,710,748	60,857,019	2.0	1.8	1.6	2.0
Institut Pasteur	31,617,540	26,547,885	26,477,069	45,158,519	1.2	0.9	0.8	1.5
Inserm	1,774,770	3,121,721	27,222,504	20,196,417	0.1	0.1	0.9	0.7
Australian NHMRC	15,457,337	18,682,020	20,242,107	19,464,047	0.6	0.6	0.6	0.6
Subtotal top 12 funders ^{B*}	2,286,866,018	2,577,455,990	2,808,483,550	2,742,875,728	89.3	87.2	88.6	89.6
Total R&D funding ^B	2,560,068,749	2,955,964,344	3,168,940,958	3,062,669,973	100.0	100.0	100.0	100.0

[^] Figures are adjusted for inflation and reported in 2007 US dollars

^A Includes new survey respondents in 2010

^B Figures for 2007 and/or 2009 have been updated and therefore differ from previously published figures

* Subtotals for 2007, 2008 and 2009 top 12 reflect the top funders for those years, not the top 12 for 2010



FUNDING FLOWS

Just over 70% of 2010 R&D funding was in the form of external grants (71.5%), while intramural funding (self-funding) by public research institutions and private companies accounted for 28.5%. PDP funding decreased by a further \$46.9m (-8.8%) in 2010, after a \$50.0m decrease in 2009. This decrease reflected both healthy funding cuts (for instance, the \$72.6m drop in RTS,S-related funding to PATH as the vaccine candidate nears successful completion) but also more worrying trends, with the majority of funders freezing or decreasing their PDP investments in 2010.

DISCUSSION

The fallout from the global financial crisis made its mark in 2010 with investment in neglected disease R&D decreasing for the first time since the G-FINDER survey began in 2007. This led to significant changes in funding patterns in 2010:

- Public and philanthropic funding dropped significantly
- Industry increased its funding substantially
- Diseases relying on public and philanthropic investors were hardest hit, including HIV/AIDS, malaria, kinetoplastids and diarrhoeal diseases, while diseases with substantial industry funding (TB and dengue) were largely protected
- PDP funding dropped significantly for the second year, with cuts from a wide range of donors including many government aid agencies.

Despite these cuts and the unfavourable economic and political climate, it is encouraging that organisations nevertheless continued to contribute generously to the multi-billion dollar effort to create new neglected disease products for patients in the developing world.



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