Global Funding of Innovation for Neglected Diseases: G-FINDER

The seventh G-FINDER survey reports on 2013 global investment into research and development (R&D) of new products for neglected diseases, and identifies trends and patterns across the seven years of global G-FINDER data. The survey covered:

- 34 neglected diseases (including 3 new diseases: cryptococcal meningitis, hepatitis C genotype 4 and leptospirosis)
- 138 product areas for these diseases, including drugs, vaccines, diagnostics, microbicides and vector control products (one product area was excluded: dengue vaccines)
- 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.

A key change for the 2014 report is that all years’ data is reported in 2013 US dollars (US$), not converted to a 2007 US$ baseline as in previous reports.

$3.2 BILLION
TOTAL NEGLECTED DISEASE R&D FUNDING

DROP IN NEGLECTED DISEASE R&D FUNDING
-$193 MILLION

INCREASE IN FUNDING TO PDPs 6.5%

DROP IN INDUSTRY TB R&D INVESTMENT SINCE 2010
-27%

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

In 2013, a reported $3,219m was invested in neglected disease R&D, consisting of $2,964m from repeat survey participants (called year-on-year – YOY – funders) and $254m from irregular survey participants. Although a substantial investment, this represented a significant drop from 2012 levels, with YOY funding down by $193m (-6.2%). This decline more than offset the moderate rise in YOY funding in 2012 (up $86m, 2.8%).

FUNDING BY DISEASE

As in previous years, the three ‘top tier’ diseases – HIV/AIDS, malaria and tuberculosis (TB) – received the vast majority of global neglected disease R&D funding. While funding for all tiers dropped in 2013, the top tier diseases saw a far larger decrease in YOY funding than the second tier, leading to a further evening out of funding share between tiers. TB was the only top tier disease that saw an increase in YOY funding (up $16m, 3.1%) in 2013. After an increase in investment in HIV/AIDS last year, funding for this disease dropped again this year (down $95m, -8.3%). Malaria funding continued to drop with a $51m fall (-9.1%).

The ‘second tier’ diseases include diarrhoeal diseases, kinetoplastids, bacterial pneumonia & meningitis, helminth infections, dengue, salmonella infections and hepatitis C genotype 4. Within this group, bacterial pneumonia & meningitis saw a moderate YOY decrease (down $26m, -26%), as did kinetoplastids (down $23m, -18%). Increased funding was reported for diarrhoeal diseases (up $21m, 14%) and salmonella infections (up $3.5m, 6.6%), while investment in the remaining second tier diseases was fairly stable.

As in previous years, the ‘third tier’ diseases – leprosy, Buruli ulcer, trachoma, cryptococcal meningitis, rheumatic fever and leptospirosis – each received less than 0.5% of global R&D funding.

Funding for platform technologies – adjuvants and immunomodulators, general diagnostic platforms, and delivery technologies and devices – each received less than 0.5% of global R&D funding.

Table 2. R&D funding by disease 2007-2013^
FUNDERS

As in previous years, the public sector played a key role in neglected disease R&D, providing two-thirds of funding ($2,128m, 66%), predominantly from high-income country governments ($2,001m, 94% of public sector funding). The philanthropic sector contributed $688m (21%) while industry invested $401m (12%). Please note that reported industry funding for all years is substantially lower than published figures in previous G-FINDER reports, since dengue vaccine R&D has been fully excluded (this is an area in which industry had significant investments).

In line with previous years, the top three public funders were the US, the European Commission (EC) and the UK. The US cut their YOY investment in neglected disease R&D by $184m (-11%) due to a significant drop from the US National Institutes of Health (NIH, down $188m, -13%) and a smaller decrease from the US Agency for International Development (USAID, down $13m, -14%). Six other top 12 government funders also reduced their YOY investment, including Australia (down $16m, -36%) and Germany (down $15m, -46%). Funding from the UK increased by $27m (up 31%), reflecting a $26m (up 62%) climb in UK Department for International Development’s (DFID) funding. Other notable increases included France (up $24m, 41%), the EC (up $18m, 18%) and the Netherlands (up $12m, 86%).

Philanthropic YOY funding was fairly stable (up $5.1m, 0.8%). This marginal change was the result of a $17m (up 3.4%) increase from the Bill & Melinda Gates Foundation – by far the largest philanthropic funder in 2013 – partly offset by an $11m (-8.2%) decrease from the Wellcome Trust. Multinational pharmaceutical companies (MNCs) were solely responsible for the drop in industry investment, decreasing funding by $38m (-11%).

### Top neglected disease R&D funders 2013

<table>
<thead>
<tr>
<th>Funder</th>
<th>US$ (millions)</th>
<th>2013 % of total</th>
<th>2007-2013 trend</th>
</tr>
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<tbody>
<tr>
<td>US NIH</td>
<td>1,186</td>
<td>1,206</td>
<td>1,394</td>
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<tr>
<td>Gates Foundation</td>
<td>506</td>
<td>677</td>
<td>614</td>
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<td>Aggregate industry</td>
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<td>Wellcome Trust</td>
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<td>European Commission</td>
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<td>UK MRC</td>
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<td>Indian ICMR</td>
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<td>Australian NHMRC</td>
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<td>27</td>
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<td>Subtotal of top 12</td>
<td>2,482</td>
<td>2,790</td>
<td>3,017</td>
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<td>Total R&amp;D funding</td>
<td>2,793</td>
<td>3,201</td>
<td>3,419</td>
</tr>
</tbody>
</table>

^ Subtotals for 2007-2012 top 12 reflect the top funders for those respective years, not the top 12 for 2013

FUNDING FLOWS

Just over three-quarters of 2013 neglected disease R&D funding (76% or $2,431m) was in the form of external grants from science and technology agencies (S&T, $1,432m, 59%), philanthropy ($688m, 28%), aid agencies ($205m, 8.5%) and other funders ($106m, 4.4%). This was a YOY decrease of $132m (-5.5%) on 2012, due to large cuts in grant funding from the US NIH, the world’s largest S&T agency.

Product development partnerships (PDPs) received $482m (15%) of neglected disease R&D funding in 2013. This year saw the first YOY increase in PDP funding in five years (up $28m, 6.5%), slightly reversing funding cuts since 2008. The rise mainly came from aid agencies (up $34m, 24%), offset by a small decrease from the philanthropic sector (down $7.8m, -3.1%).
DISCUSSION

The US budget sequester had a significant impact on neglected disease R&D funding in 2013

- Since the US Government generally contributes almost half of total global neglected disease R&D funding, any changes in its funding patterns or government policy have a substantial impact on global trends

- In 2013, total YOY neglected disease R&D funding dropped by $193m (-6.2%), primarily as a result of the 2013 US budget sequester. The sequester lowered the US NIH's budget across all health and research areas, with its neglected disease R&D funding seeing a $188m (-13%) funding cut. European public funders only partly offset the impact of the US sequester, increasing their funding by $46m (up 13%).

2013 saw the first increase in funding to PDPs in five years

- PDP funding has been declining over the past five years due to cuts in YOY aid funding (down $92m, -39%) between 2009 and 2012, and decreases in philanthropic funding since 2008 (down $152m, -38%)

- 2013, however, saw the first increase in funding to PDPs since 2008, entirely due to increased aid agency funding (up $34m, 24%), in particular from UK DFID (up $26m, 62%) due to the first disbursement of a new, five-year funding stream to PDPs

- The net result was a slight upturn (up $28m, 6.5%) in investment into PDPs in 2013, although funding was still down 12% (down $63m) on 2007 levels.

Industry funding is low and declining

- The exclusion of dengue vaccines, an increasingly commercial area, from G-FINDER in 2013 has allowed trends in industry investment to be seen more clearly; industry contributed only 12% of global funding for neglected disease R&D

- Industry YOY funding dropped by $74m (-19%) between 2010 and 2013 due to falls in malaria and TB funding. The malaria funding fluctuations appear to reflect normal changes in the pipeline; however, industry TB funding decreased by $45m (-27%), almost entirely due to decreased investment in the early TB drug pipeline.

Changing funding patterns from the Gates Foundation

- Although still far from their highest level of funding in 2008, 2013 saw the first increase in overall funding by the Gates Foundation in five years, largely due to greater investments in industry and other mechanisms

- The Gates Foundation remains the largest funder of PDPs, with a 2013 investment of $234m (45% of Gates Foundation funding). Since the 2008 funding peak, there has been a decrease of $148m (-39%) in Gates Foundation funding to PDPs, meaning that their PDP funding has decreased to levels lower than in 2007. This could be attributed to a shift from largely core funding to PDPs to project-based funding, and the lack of advancements in late-stage trials in recent years

- Conversely, Gates Foundation funding to industry, and other philanthropic and non-profit organisations more than tripled (up $54m) from 2008 to 2013. Although still a small percentage of its investments, funding to industry increased from $2.6m in 2008 to $30m in 2013, while funding to other philanthropic and non-profit organisations increased by $27m (up 146%) over the same period.

Download the full report at: http://policycures.org/g-finder2014.html