EXECUTIVE SUMMARY

The survey

The fifth G-FINDER survey reports on 2011 global investment into research and development (R&D) of new products for neglected diseases, and identifies trends and patterns across the five years of global G-FINDER data. It covers:

• 31 neglected diseases
• 134 product areas for these diseases, including drugs, vaccines, diagnostics, microbiotics 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.

In all, 204 organisations completed the survey in 2011.

Findings

In 2011, total reported funding for neglected disease R&D was $3,045m ($3,318m in unadjusted 2011 US$. Overall funding levels changed little from 2010 with repeat survey participants – year-on-year (YOY) funders – reducing their investment by only $8.6m (-0.1%). An additional $142.9m was reported by organisations that have participated in some, but not all, years of the survey. Up until 2009 global investment in neglected disease R&D had been increasing steadily, but has been in gradual decline thereafter as the impact of the global financial crisis became evident. Despite this, annual YOY funding for neglected disease R&D was still $443.7m higher in 2011 than in 2007 ($2,002m compared to $2,459m). Both public and philanthropic funding have dropped away since the global financial crisis, but industry funding has increased dramatically over the survey period, predominantly due to increased multinational pharmaceutical company (MNC) investments.

DISEASE FINDINGS

As in previous years, the three ‘top tier’ diseases – HIV/AIDS, malaria and tuberculosis (TB) – again received approximately one-third to one-fifth of total global neglected disease R&D funding each, with HIV/AIDS receiving 33.6%, malaria 18.4% and TB 17.3%. However, the share of global funding for these three diseases ($2,113m, 69.4%) continued to decline with cuts for TB (down $45.7m, -8.3%) and HIV/AIDS (down $41.1m, -4.0%) and only a modest increase for malaria (up $55.1m, 31.8%), mainly driven by industry investment in dengue vaccine development. Changes for the remaining ‘second tier’ diseases were closely matched by investments from industry ($2,025.1m, 17.2%).

Eleven of the top 20 government funders cut their neglected disease R&D funding in 2011. The US maintained its position as the pre-eminent funder of neglected disease R&D, accounting for just under 70% of all public funding ($1.4bn, 69.5%), but US public funding dropped in 2011 ($290.6m, 2.2%). After notable increases in 2009 and 2010, UK public funding decreased significantly in 2011 (down $29.2m, -18.0%), driven by a $21.5m drop in funding from the UK Department for International Development (DFID). Several public funders increased funding in 2011: the European Commission (EC, up $12.7m, 13.7%), Australia (up $6.7m, 27.1%) and Netherlands (up $6.1m, 35.5%).

Philanthropic funding was up $6.5m (1.2%) in 2011, mostly due to a $14.3m increase in funding from the Wellcome Trust masking a decrease from the Gates Foundation (down $29.2m, -18.0%). As in 2010, the pharmaceutical industry accounted for the biggest sectoral increase (up $200.3m, 42%) – mostly from MNCs (up $256.5m, 5.8%) – although this was far smaller than the 2010 increase of $1073m (up 28.2%).

Five-year funding trends

The five years of the G-FINDER survey have coincided with a turbulent period for public funders with YOY public funding peaking at $2.0bn in 2009 but in slow decline since. Despite cuts in recent years, many of the top public funders including the US, UK, France and Australia were still funding at higher levels in 2011 than in 2007. However, this was not the case for all, with Ireland, the EC, Belgium, Netherlands, Brazil and Canada funding at lower levels in 2011 than in 2007. Aid agencies, in particular, have slashed funding for neglected disease R&D (YOY funding down from $286.9m in 2007 to $294.0m in 2011), with some international aid budgets (Ireland, Netherlands, Sweden) just a fraction of what they were in 2007. In the same period, India overtook Brazil as the leading innovative developing country (IDC) funder of neglected disease R&D.

Philanthropic funding has declined sharply since the global financial crisis – mostly reflecting changes in funding from the Gates Foundation – with 2011 YOY funding now close to 2007 levels: $851.4m in 2011 compared to $823.3m in 2007, after peaking in 2009 at $891.5m. Industry funding has increased dramatically over the survey period, with MNC investments rising steadily from $273.3m in 2008 to $466.9m in 2011. However, the majority of this increase was due to very large investments in a single product area – dengue vaccines (up from $40.2m in 2008 to $141.6m in 2011) – where expensive late-stage trials are underway.

Five-year disease trends

Between 2007 and 2011, funding shifted away from the top tier diseases (HIV/AIDS, malaria and TB), which saw their share of global funding fall from 76.6% in 2007 to 69.4% in 2011, to the second tier diseases which increased their share from 16.2% to 24.1%. The third tier diseases remained poorly-funded, collectively receiving less than 1% of global funding each year. Some diseases – including malaria, TB, dengue, bacterial pneumonia & meningitis and helminths – have seen a strong upward trend in funding despite the global financial crisis, in some cases (e.g. dengue) driven by increased industry investment as products reach late stage development. Other diseases – including HIV/AIDS, diarrhoeal diseases, kinetoplastids and rheumatic fever – have been in steady decline since the global financial crisis due to government budget cuts (HIV/AIDS), declining philanthropic funding (diarrohaeal diseases and kinetoplastids) or the withdrawal of industry funding (rheumatic fever).
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The fifth G-FINDER survey reports on 2011 global investment into research and development (R&D) of new products for neglected diseases, and identifies trends and patterns across the five years of global G-FINDER data. It covers:

- 31 neglected diseases
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In all, 204 organisations completed the survey in 2011.

Findings

In 2011, total reported funding for neglected disease R&D was $3,045m ($3,271m in unadjusted 2011 US$). Overall funding levels changed little from 2010 with repeat survey participants – year-on-year (YOY) funders – reducing their investment by only $3.6m (-0.1%). An additional $142.9m was reported by organisations that have participated in some, but not all, years of the survey. Up until 2009 global investment in neglected disease R&D had been increasing steadily, but has been in gradual decline thereafter as the impact of the global financial crisis became evident. Despite this, annual YOY funding for neglected disease R&D was still $443.7m higher in 2011 than in 2007 ($2,002m compared to $2,459m). Both public and philanthropic funding have dropped away since the global financial crisis, but industry funding has increased dramatically over the survey period, predominantly due to increased multinational pharmaceutical company (MNC) investments.

DISEASE FINDINGS

As in previous years, the three ‘top tier’ diseases – HIV/AIDS, malaria and tuberculosis (TB) – again received approximately one-third to one-fifth of total global neglected disease R&D funding each, with HIV/AIDS receiving 33.6%, malaria 18.4% and TB 17.3%. However, the share of global funding for these three diseases ($2,113m, 69.4%) continued to decline with cuts for TB (down $45.7m, -8.3%) and HIV/AIDS (down $41.1m, -4.0%) and only a modest increase for malaria (up $14.4m, 2.8%). The second tier diseases – dengue, diarrhoeal diseases, kinetoplastids, bacterial pneumonia & meningitis, helminth infections and salmonella infections – increased their collective share to almost a quarter of global funding (24.1%) in 2011, receiving between 1% and 8% of total funding each. YOY funding for dengue increased significantly in 2011 (up $54.0m, 31.8%), mainly driven by industry investment in dengue vaccine development. Changes for the remaining ‘second tier’ diseases were mixed – funding decreased moderately for kinetoplastids (down $18.9m, -14.1%) and diarrhoeal diseases (down $11.9m, -7.8%) but increased for bacterial pneumonia & meningitis (up $10.7m, 13.1%) and helminth infections (up $2.2m, 3.3%). The ‘third tier’ diseases – trachoma, leprosy, Buruli ulcer and rheumatic fever – each received less than 0.5% of global R&D funding.

Five-year disease trends

Between 2007 and 2011, funding shifted away from the top tier diseases (HIV/AIDS, malaria and TB), which saw their share of global funding fall from 76.6% in 2007 to 69.4% in 2011, to the second tier diseases which increased their share from 16.2% to 24.1%. The third tier diseases remained poorly-funded, collectively receiving less than 1% of global funding each year. Some diseases – including malaria, TB, dengue, bacterial pneumonia & meningitis and helminth infections – have seen a strong upward trend in funding despite the global financial crisis, in some cases e.g. dengue driven by increased industry investment as products reach late stage development. Other diseases – including HIV/AIDS, diarrhoeal diseases, kinetoplastids and rheumatic fever – have been in steady decline since the global financial crisis due to government budget cuts (HIV/AIDS), declining philanthropic funding (diarhoeal diseases and kinetoplastids) or the withdrawal of industry funding (rheumatic fever).

FUNDERS

The public sector continued to play a key role in neglected disease R&D, providing almost two-thirds ($1.6bn, 64.0%) of global funding, predominantly from high-income country (HIC) governments ($1.1bn, 39.5%). As in 2010, the philanthropic sector contributions ($570.6m, 18.7%) were closely matched by investments from industry ($625.1m, 17.2%).

Eleven of the top 20 government funders cut their neglected disease R&D funding in 2011. The US maintained its position as the pre-eminent funder of neglected disease R&D, accounting for just under 70% of all public funding ($1.4bn, 69.5%), but US public funding dropped again in 2011 (down $30.6m, -2.1%). After notable increases in 2009 and 2010, UK public funding decreased significantly in 2011 (down $29.2m, -18.0%) driven by a $21.5m drop in funding from the UK Department for International Development (DFID). Several public funders increased funding in 2011: the European Commission (EC, up $12.7m, 17.4%), Australia (up $6.7m, 27.1%) and Netherlands (up $6.1m, 30.5%).

Philanthropic funding was up $6.5m (1.2%) in 2011, mostly due to a $14.3m increase in funding from the Wellcome Trust masking a decrease from the Gates Foundation ($451.4m in 2011 compared to $523.3m in 2007), with some international aid budgets (Ireland, Netherlands, Sweden) cutting their support. Belgium, Netherlands, Brazil and Canada funding at lower levels in 2011 than in 2007. Aid agencies, in particular, have slashed funding for neglected disease R&D (YOY funding down from $268.9m in 2010 to $224.0m in 2011), with some international aid budgets (Ireland, Netherlands, Sweden) just a fraction of what they were in 2007. In the same period, India overtook Brazil as the leading innovative developing country (IDC) funder of neglected disease R&D.

Philanthropic funding has declined sharply since the global financial crisis – mostly reflecting changes in funding from the Gates Foundation – with 2011 YOY funding now close to 2007 levels: $51.4m in 2011 compared to $523.3m in 2007. After peaking in 2009 at $961.5m, Industry funding has increased dramatically over the survey period, with MNC investments rising steadily from $273.3m in 2008 to $466.9m in 2011. However, the majority of this increase was due to very large investments in a single product area – dengue vaccines (up from $40.2m in 2008 to $141.6m in 2011) – where expensive late-stage trials are underway.
EXECUTIVE SUMMARY

FUNDING FLOWS

Slightly more than two-thirds of 2011 R&D funding was in the form of external grants (71.4% or $2,174m), while intramural funding (self-funding) by public research institutions and private companies accounted for 28.6% ($870.9m). Product development partnership (PDP) funding declined in 2011 (down $31.8m, -0.6%) with the largest drop from the Gates Foundation (down $31.4m, -12.4%). Eight out of twelve aid agencies also cut their funding to PDPs, with a collective reduction of $30.6m in 2011.

Five-year funding flow trends

Self-funding has increased for YOY funders from $505.9m in 2007 to $825.2m in 2011, with much of this due to growing MNC industry investment in neglected disease R&D. Grant funding to researchers and product developers also increased from $1.4bn in 2007 to $1.5bn in 2011, although it is still $94.9m below its 2009 peak.

PDP funding has decreased over the five years of the G-FINDER survey, with 2011 funding of $424.1m being well below the 2008 peak of $980.1m. PDPs have seen cuts in the order of $50m to $60m per year for each of the past three survey years – a total drop of $130m in annual funding. The steady decrease is driven largely by a drop in funding from the philanthropic sector, and more specifically, the Gates Foundation, that has cut funding for PDPs by over a third from its peak in 2008 (down $129.1m, -36.7%). During this same period, public funding has remained steady, due to widespread cuts in aid agency funding being largely offset by increased funding from science and technology agencies.

DISCUSSION

Over the past five years, we have seen changes – albeit modest – in the type of research that is funded and developed for patients in developing countries. These changes stem from changing funding patterns of the public and philanthropic sectors, and the impact of increased industry investment.

Public funding

- Public funding remains the mainstay of neglected disease R&D, accounting for 65.6% of total funding across the five years.
- Public funding has shifted substantially from product development to basic research, which now accounts for 31.2% of total public funding in 2011 compared to 26.0% in 2007, with an additional $134.2m invested in basic research.
- Public funding for PDPs has remained steady but there have been significant changes in public funding sources, with cuts to aid agency funding offset by increased funding from science & technology (S&T) agencies.

Philanthropic funding

- Philanthropic funding has dropped significantly since the global financial crisis, driven by large drops in Gates Foundation funding since 2008 (down $169.1m, -27.4%). This has had a pronounced impact on PDPs in particular since the Gates Foundation provides over half (53.6%) of global PDP funding.
- Philanthropic funding plays a contributing rather than dominant role overall – unlike the public sector or industry – with the philanthropic share of funding for each disease ranging from 6.4% of total funding for dengue, through to salmonella and HIV/AIDS (12.1% and 12.4%, respectively), up to 23.5% for TB, and around 30% of total funding for most other diseases: diarrhoeal diseases (30.1%), helminths (30.7%), kinetoplastids (31.7%), malaria (32.4%), bacterial pneumonia & meningitis (35.0%).

Industry funding

- R&D funding for diseases with strong industry support has been very resilient, with funding for dengue and bacterial pneumonia & meningitis – which received nearly half their total five-year funding from industry – substantially outperforming all other diseases over the survey period, particularly in the post-financial crisis years.
- Industry funding has had the most significant impact on dengue R&D, which has seen enormous growth between 2008 and 2011 (up $115.8m, 107.4%), almost entirely due to MNC funding for clinical development of vaccines.

Overall impact

- Despite initial fears, the global financial crisis has not had a dramatic impact on overall neglected disease R&D funding, with public funding essentially stable and decreases from the philanthropic sector largely offset by increased industry funding.
- There has been a moderate shift toward semi-commercial diseases (dengue, TB and bacterial pneumonia & meningitis) which increased their share of global neglected disease R&D funding from 22.4% of total funding in 2008 to 28.0% in 2011.
- Differing investment patterns between sectors can also affect the type of research that is funded for a given disease, with an average of over 70% of total funding invested into product development for the semi-commercial diseases, compared to an average 60% for diseases with a significant philanthropic stake, and an average 45% for diseases that rely heavily on the public sector. For high-funded diseases this is less of an issue, but if a disease has both low funding and a low focus on product development, outcomes are likely to be poor.
- PDPs appear to be diversifying their funding sources towards science and technology agencies, but remain highly dependent on the Gates Foundation and aid agencies.
Executive Summary

Slightly more than two-thirds of 2011 R&D funding was in the form of external grants (71.4% or $2,174m), while intramural funding (self-funding) by public research institutions and private companies accounted for 28.6% ($580.1m). Product development partnership (PDP) funding declined in 2011 (down $129.1m, -36.7%) with the largest drop from the Gates Foundation (down $169.1m, -27.4%). Eight out of twelve aid agencies also cut their funding to PDPs, with a collective reduction of $30.6m in 2011.

Five-year funding flow trends

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PDP funding has decreased over the five years of the G-FINDER survey, with 2011 funding of $421.4m being well below the 2008 peak of $590.1m. PDPs have seen cuts in the order of $50m to $65m per year for each of the past three survey years – a total drop of $130m in annual funding. The steady decrease is driven largely by a drop in funding from the philanthropic sector, and more specifically, the Gates Foundation, that has cut funding for PDPs by over a third from its peak in 2008 (down $125.1m, -36.7%). During this same period, public funding has remained steady, due to widespread cuts in aid agency funding being largely offset by increased funding from science and technology agencies.

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