Reorienting health aid to meet post-2015 global health challenges: a case study of Sweden as a donor

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Abstract  The international development community is transitioning from the era of the Millennium Development Goals (MDGs), ending in 2015, to the era of the Sustainable Development Goals (SDGs), which have a 2030 target. Global development assistance for health (DAH) increased substantially in the MDGs era, from US $10.8 billion in 2001 to $28.1 billion by 2012 (in 2010 US dollars), and it played a crucial role in tackling global challenges such as HIV/AIDS and malaria. In this paper, we describe the likely health challenges of the SDGs era and the types of international assistance that will be required to help tackle these challenges. We propose a new way of classifying DAH based on considering the functions that it will need to serve in order to address these post-2015 challenges. We apply this new classification to the current health aid spending of one donor, Sweden, as a case study. Based on our findings, we suggest ways in which Sweden’s DAH could be reoriented towards meeting the health challenges of the next two decades.

Keywords: development assistance for health, Global Health 2035, aid, functions

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I. Introduction

In December 2013, the Lancet Commission on Investing in Health, an international group of 25 economists and global health experts, published ‘Global Health 2035: A World Converging within a Generation’ (Jamison et al., 2013). The report laid out a series of opportunities for donors, low-income countries (LICs), and lower middle-income countries (LMICs) to achieve dramatic gains in health by 2035. Modelling by the commission found that with enhanced investments to scale up existing and new health interventions, such as modern contraceptives, insecticide-treated bed nets for malaria prevention, childhood immunizations, and antibiotics to treat childhood pneumonia, and the systems to deliver them, most LICs and LMICs could achieve a ‘grand convergence’ in global health, reducing deaths from infections and child deaths down to levels seen today in the best-performing middle-income countries (Figure 1).

The report argued that non-communicable diseases (NCDs) and injuries can be curbed through fiscal policies, such as taxing tobacco and alcohol and removing fossil fuel subsidies. It also made the case that pro-poor universal health coverage (UHC)—in which public financing is used initially to fund packages of interventions for diseases that disproportionately affect the poor—can be an efficient way to achieve health and financial protection. As public financing grows, the package of interventions can then be expanded.

In Global Health 2035, the authors argued that development agencies should make health-sector investments a high priority when it comes to inter-sectoral aid allocation. Their argument was based on empirical evidence showing the following.

(a) The returns on investing in health are very impressive. For example, the benefit:cost ratio (BCR) of investing in achieving a grand convergence over the period 2015 to 2035 in low- and lower-middle-income countries is between 9 and 20 to one. (Jamison et al., 2013).

Figure 1: Impact of enhanced health investments on under-5 mortality rates in low- and lower-middle-income countries
The returns to health investment compare very favourably with the returns to investing in other sectors. In 2012, a panel of economists (including Nobel laureates) defined 16 aid investments as ‘worthy’ based on their BCRs, of which 10 were health investments, including all of the top five (Copenhagen Consensus, 2012). These top five were: increased use of micronutrient supplements for children; subsidizing malaria drugs; expanding childhood immunization; deworming school children; and scaling up tuberculosis treatment. While the panel’s approach has been the subject of debate (The Economist, 2004), and there is a case for focusing on other areas such as climate change, as highlighted by the 2015 report of the Global Commission on the Economy and Climate, nevertheless there is a strong ‘development case’ for investing in health.

There is a positive association between health aid, scale-up of health tools, and reduced mortality (i.e. the history of implementation success for health aid supports the value of such investments). A good example is the evidence showing a link between rising aid for malaria, rising coverage with malaria interventions (such as insecticidal bed nets), and reduced child mortality (Flaxman et al., 2010; Murray et al., 2014).

Global Health 2035 suggested that the above evidence ‘strengthens the case for allocating a higher proportion of official development assistance to development assistance for health’.

A central argument in Global Health 2035 is that the nature of development assistance for health (DAH) will need to evolve over the next 20 years. While achieving grand convergence will have an incremental cost of about US$70 billion annually from 2015 to 2035 (in 2011 US dollars) (i.e. over and above current health spending), most of this cost could be covered from domestic financing, given the projected economic growth of LICs and LMICs. The Global Health 2035 commission forecast real gross domestic product (GDP) growth per year at 4.5 per cent for today’s LICs and 4.3 per cent for today’s LMICs between 2011 and 2035. Based on these projections, many of these countries should be able to graduate from DAH over time, increasingly funding their convergence from domestic sources. Given the gradual replacement of health aid with domestic spending, Global Health 2035 argued that international collective action should be targeted increasingly towards the three essential ‘core functions’ of global health: (a) providing global public goods (GPGs) (e.g. health research and development, market shaping to lower the prices of health commodities, knowledge generation and sharing); (b) managing negative cross-border externalities (e.g. preparing for the next influenza pandemic and the consequences of microbial evolution); and (c) providing global health leadership and stewardship (e.g. consensus building on health policies) (Jamison et al., 2013).

These three core functions have distinct features: providing GPGs refers to providing goods whose benefits are non-rival and non-excludable (Kanbur, 2011); managing negative cross-border externalities refers to tackling the cross-border consequences of actions in one country (Kanbur, 2011); and providing global health leadership and stewardship can be defined as ‘identifying needs to be met and taking a leadership role in setting global norms’ (Moon et al., 2010). Nevertheless, there is an interplay and interconnection between them (Kanbur, 2011).

This paper is an initial exploration of the potential implications of the trends described in Global Health 2035 for the future of DAH. We use a case study—Sweden—to
demonstrate these implications for one specific donor. The case-study approach has been defined by Gilson (2012) as ‘a research strategy entailing an empirical investigation of a contemporary phenomenon within its real life context using multiple sources of evidence’. The approach has been widely used in global health policy research and analysis (Gilson, 2012). A major advantage of this methodology, argue Crowe and colleagues (2011), is that it ‘allows, amongst other things, critical events, interventions, policy developments and programme-based service reforms to be studied in detail in a real-life context.’

We begin by laying out a new way of classifying DAH, one that is based on considering the two key functions that it will need to serve from 2015 to 2035. These functions are denoted as ‘global’ (DAH to address global, transnational issues) and ‘local’ (aid to LICs and LMICs that could be replaced with domestic financing as countries get richer).

We then apply this ‘global versus local’ classification to Sweden’s current multilateral and bilateral DAH and find that such aid is mostly targeted at local functions. We examine the impact of a range of possible economic growth paths of the countries that Sweden currently supports through its bilateral assistance, and show that many of these could graduate from aid by 2035. We also estimate the likely growth in Swedish DAH from 2015 to 2035. We argue that greater support for global functions will be essential for achieving the Global Health 2035 goals. Finally, we lay out a range of possible policy options for how Sweden’s future DAH could be used to help fill the financing gap for global functions, while continuing to provide local functions.

Our paper is based upon a much larger report commissioned and funded by Sweden’s Expert Group for Aid Studies (Yamey et al., 2014).

II. A new classification of DAH

In the era of the Millennium Development Goals (MDGs), adopted in 2000 and ending in 2015, DAH increased substantially, from US$10.8 billion in 2001 to $28.1 billion (in 2010 US dollars) by 2012 (IHME, 2013). These figures may be an underestimate of total donor support for global health because they exclude support from a number of sources, such as from ‘non-traditional’ donors (i.e., countries that are not members of the Development Assistance Committee) and from non-governmental organizations outside the US (IHME, 2013). Global health scholars have analysed this rise in DAH using two main approaches (McCoy et al., 2009; Piva and Dodd, 2009; IHME, 2013): tracking financial flows towards specific health challenges (e.g. DAH for HIV/AIDS control versus for malaria control), or tracking flows from different funding sources (e.g. DAH from bilateral donors versus multilateral donors).

However, as illustrated by Global Health 2035, it is useful to analyse DAH according to functions, instead of a disease- or source-specific focus. One reason why it is useful is that in order to achieve the 2035 goals of the commission, it will become increasingly important for DAH to support, for example, the discovery and development of innovative health tools. Grand convergence by 2035 cannot be achieved with today’s health technologies alone; new tools will be needed (Jamison et al., 2013; Verguet et al., 2014). Modelling conducted for Global Health 2035 found that even with very aggressive
scale-up of today’s health tools to about 90 per cent coverage or more, low-income countries would only reach about two-thirds of the way to convergence by 2035. Fully closing the gap will require new tools, such as vaccines against HIV, TB, and malaria. Therefore it will also become increasingly important to track how much funding is going towards such functions. We therefore propose a new type of classification, based on considering the functions that DAH will need to serve in the post-MDGs era.

Building on previous work by Jamison, Frenk, and Knaul (1998), we define the two major functions of DAH as ‘global functions’ and ‘local functions’. Global functions are those that go beyond national boundaries, transcending national sovereignty; global health institutions are responsible for these functions. We define three categories of global functions: providing global public goods; controlling cross-border externalities; and leadership and stewardship (Table 1). In contrast, DAH for local functions helps to ‘tackle time-limited problems within individual countries that justify international collective action because of highly constrained national capacity’ (Jamison et al., 2013). Such local DAH involves direct country assistance—financial or technical—targeted at resource-poor nations. Over time, as these resource-poor countries experience economic growth, moving along the development income, they will increasingly be able to finance these local functions with domestic spending. In other words, local DAH is largely replaceable by domestic funding once country income grows.

Our division of aid into global versus local functions represents an attempt at moving away from analysing DAH according to the traditional country- or disease-specific focus. While there is clearly great value in tracking DAH by disease and country target, as is done annually for example by the Institute for Health Metrics and Evaluation (IHME, 2013), we believe that there are several benefits of analysing DAH according to functions. This new approach will allow donors to better understand when and where domestically generated resources ought to finance certain health activities, and when and where there is justification for continued external assistance.

Throughout the rest of this paper, we use the classification of DAH into global versus local functions as an overarching framework for considering DAH today and how it will need to evolve in the post-2015 era. We mostly focus on a single donor (Sweden) as a ‘deep dive’ case study, though we do compare Sweden’s current bilateral DAH with

Table 1: Classification of DAH into support for global versus local functions

| Function       | Category                            | Examples                                                   |
|----------------|-------------------------------------|------------------------------------------------------------|
| Global         | Providing global public goods       | – Research and development (R&D) for new health tools       |
|                |                                     | – Knowledge generation and sharing                          |
|                |                                     | – Intellectual property and market-shaping activities       |
|                | Controlling cross-border externalities | – Infectious disease surveillance and information sharing to control cross-border outbreaks |
|                |                                     | – Tackling counterfeit drugs, antibiotic resistance, and tobacco marketing |
|                | Leadership and stewardship          | – Global health advocacy, priority setting, aid effectiveness |
| Local          |                                     | – Direct financial and technical assistance to a resource-poor country |
that of a number of other donors. We also use the classification in considering the ways in which Sweden’s future DAH could be targeted.

III. Sweden’s health aid: a case study

In our case study of Swedish DAH, we begin with a brief overview of it. We then examine Sweden's support to multilateral agencies, and estimate the proportion of this multilateral support that is directed towards global versus local functions. This is followed by an assessment of Sweden’s bilateral DAH to its 12 focus countries. We project how the designation of countries as low-income, lower-middle-income, upper-middle-income, and high-income could evolve from 2015 to 2035, and discuss the implications of this evolution for Sweden's bilateral DAH. We also estimate the proportion of Sweden’s bilateral support that is directed towards global versus local functions, and compare this breakdown of bilateral DAH with that of four other donors: Canada, the Netherlands, Norway, and the United Kingdom (UK). Finally, we give our projections of how Swedish DAH could grow over the next 20 years.

(i) Overview of Swedish DAH

Data on Sweden’s DAH were collected from the Ministry for Foreign Affairs and The Swedish International Development Cooperation Agency (Sida). For bilateral health aid we used OECD data. For Swedish multilateral DAH we used estimations done by Sida and the Ministry for Foreign Affairs. The reason we used different data for the multilateral DAH is because much of Sweden’s multilateral aid is provided as core support to UN organizations and thus not registered as aid for health. Therefore the share of the core support that can be attributed to health has to be calculated manually.

In the MDGs era, Swedish DAH rose significantly, from 1.8 billion SEK in 2001 to about 4.3 billion SEK in 2014 (Figure 2). It now represents about 13 per cent of total Swedish development assistance. The government estimates that Swedish DAH is directed mainly to health service delivery (about 60 per cent of total resources), capacity development (30 per cent), and policy dialogue (10 per cent).

(ii) Sweden’s multilateral DAH

Most Swedish DAH is channelled through multilateral institutions. The largest increases in multilateral funding in recent years were in Sweden’s contributions to the Global Fund and to Gavi, the Vaccine Alliance (GAVI). By 2013, Sweden gave over 1 billion SEK to these two organizations, or about 25 per cent of total Swedish DAH (Table 2).

We estimated the proportion of Sweden’s multilateral support to health that is directed towards global versus local functions. Our approach was to search key documents on the websites of the top five multilateral recipients of Swedish DAH (the Global Fund, UNFPA, GAVI, UNICEF, and UNAIDS), together with the World Health Organization (WHO). From the documents we extracted expenditure data from each multilateral organization. We also used the documents to find information that could guide us in assessing to what extent different expenditures could be categorized
as either ‘global’ or ‘local’. Such information included overall organizational as well as more specific programme descriptions. This approach has obvious uncertainties, of which we are aware, but provides a starting point for estimating the share of multilateral funding that supports global and local functions.

To give an example, our analysis of the Global Fund’s expenditures from 2002 to 2012 (Table 3), suggest that the Fund mostly played a supportive role, a finding concurrent with the results of Atun and colleagues’ (2012) mapping of functions and innovations of the Global Fund. It largely funds national disease control activities in individual countries, which are mainly the local functions of service delivery and improved programme management. Nevertheless, some of its funding is for global functions, such as helping to control the spread of drug-resistant malaria and drug-resistant TB and
acting as a ‘market shaper’ for HIV/AIDS drugs and malaria bed nets, effectively lowering prices for all low- and middle-income countries. We conclude that about 20–25 per cent of Sweden’s contribution to the Global Fund could be considered as global.

We adopted a similar approach for each of the top five multilateral recipients and for the WHO, and were able to make a judgement on the approximate breakdown of each organization’s total disbursements into global versus local functions. We applied these breakdowns to Sweden’s support to these six organizations in the year 2012, the latest year for which detailed data were available at the time that we conducted our study (Table 4). Across the five multilateral financing organizations, an average of about 21 per cent of

### Table 3: Global Fund DAH by type of expenditure, 2002–12

| Cost category                                         | US$m  | % total | *Proxy for global or local valuation |
|-------------------------------------------------------|-------|---------|-------------------------------------|
| Health products and health equipment                  | 2,700 | 21.2    | Local                               |
| Medicines and pharmaceutical products                 | 2,500 | 19.7    | Local                               |
| Human resources                                       | 1,900 | 14.9    | Local                               |
| Training                                              | 1,200 | 9.4     | Local                               |
| Infrastructure and other equipment                    | 1,000 | 7.9     | Local                               |
| Monitoring and evaluation                             | 550   | 4.3     | Global                              |
| Living support to clients/target populations          | 600   | 4.7     | Local                               |
| Planning and administration                           | 600   | 4.7     | Global                              |
| Communication materials                               | 510   | 4.0     | Global                              |
| Procurement and supply management costs               | 390   | 3.1     | Global                              |
| Overheads                                             | 370   | 2.9     | Global                              |
| Technical assistance                                  | 230   | 1.8     | Global                              |
| Other                                                 | 160   | 1.3     | Global                              |
| Total                                                 | 12,710| 100.0   |                                     |

**Notes:** All cumulative budgetary numbers reproduced are in nominal US$. *Authors’ choice of proxies for global vs local valuation.**

**Source:** Global Fund 2012 Annual Report.

### Table 4: Breakdown of Sweden’s multilateral health disbursements into global and local DAH

| Multilateral recipient of Swedish DAH | Proportion of multilateral agency spending that is global (median is shown in parentheses) | Proportion of multilateral agency spending that is local (median is shown in parentheses) | Total amount of Swedish DAH channelled to the agency in 2012 (MSEK) | Amount of agency spending that is global* (MSEK) | Amount of agency spending that is local* (MSEK) |
|--------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| Global Fund                          | 20–25% (22.5%)                                                                                 | 75–80% (77.5%)                                                                                 | 700                                                                  | 157.5                                         | 542.5                                         |
| UNFPA                                | 10–15% (12.5%)                                                                                 | 85–90% (87.5%)                                                                                 | 445                                                                  | 55.6                                          | 389.4                                         |
| GAVI                                 | 20–25% (22.5%)                                                                                 | 75–80% (77.5%)                                                                                 | 375                                                                  | 84.4                                          | 290.6                                         |
| UNICEF                               | 3–8% (5.5%)                                                                                   | 92–97% (94.5%)                                                                                 | 283                                                                  | 15.6                                          | 267.4                                         |
| UNAIDS                               | 35–40% (37.5%)                                                                                 | 60–65% (62.5%)                                                                                 | 266                                                                  | 99.8                                          | 166.2                                         |
| WHO                                  | 62%                                                                                           | 38%                                                                                           | 34                                                                   | 21.1                                          | 12.9                                          |
| Average proportion                   | 21%                                                                                           | 79%                                                                                           | —                                                                    | —                                             | —                                             |
| Total disbursements                  | —                                                                                             | —                                                                                             | 2,103                                                               | 434                                           | 1,669                                         |

**Notes:** MSEK: million SEK. *We applied the median proportions to the total amount.
Sweden’s DAH in 2012 was for global functions, equivalent to a total of 434m SEK, and an average of 79 per cent was for local functions, equivalent to 1,669m SEK. We acknowledge that there is considerable uncertainty around these estimates and they should be interpreted as preliminary. Nevertheless, our results suggest that most of the DAH channelled through ‘global’ multilateral financing agencies is still being directed at local functions—a surprising finding.

(iii) Sweden’s bilateral DAH

Swedish bilateral health aid consists of three main types: country programmes; regional programmes; and global programmes (Figure 3). The largest share of bilateral health aid, 54 per cent, is for country programmes. In 2013, country programmes received about 880m SEK, representing just over 20 per cent of total Swedish DAH. The three largest programmes were in Zambia, Bangladesh, and the Democratic Republic of the Congo (DR Congo).

Below we give a brief overview of the 12 countries that currently receive support from Sweden, and then project how country income levels are likely to change from 2012 to 2035. This allows us to make an informed judgement on which countries are likely to still need direct country support by 2035.

Overview of country programmes

In 2013, Sweden gave support for health to the countries shown in Table 5. Sub-Saharan African countries received the bulk of the assistance in 2013. The Swedish government decides on the choice of countries for support and the funding levels. Sida provides background materials to the government for these decisions and executes the country programmes.

The recipients of Swedish DAH through country programmes include countries with varying income levels and health needs. They include six low-income countries (the

Figure 3: Distribution of Swedish bilateral DAH, 2013 (nominal terms)

Source: Ministry for Foreign Affairs (2014).
poorest being DR Congo), five lower middle-income countries, and one upper middle-income, South Africa. The countries with the greatest health needs include DR Congo, Somalia, and South Sudan, which are all countries with child mortality rates above 100 per 1,000 live births. Guatemala has the lowest child mortality rate of the 12 countries, at 32 per 1,000 live births.

Sweden plans to end support for the two highest-income countries on the list (South Africa, Guatemala) and increase support for Myanmar; this shift will increasingly target bilateral resources on poorer countries with greater health needs, which is supportive of the convergence agenda outlined in section I.

The emphasis of Sweden’s bilateral assistance in 2012 was on reproductive health care, basic health care, and control of sexually transmitted infections, including HIV/AIDS. This emphasis is in line with the long-term overall priorities for Sweden’s health aid (Government Offices of Sweden, 2014). These focus areas are also all in line with achieving a grand convergence in global health around infections and reproductive, maternal, newborn, and child health conditions.

Anticipated economic growth of countries supported by Sweden

How is the mix of countries supported by Sweden likely to change over the next 20 years? The mix will probably be influenced by the anticipated economic growth of low-income countries and middle-income countries and by the DAH eligibility criteria that Sweden adopts. Based on projected economic growth, we estimated and compared the distribution of countries across World Bank income classifications in 2012 and 2035. Table 6 summarizes our projections of the growth in gross national income per capita (GNI per capita) from 2013 to 2035 in the 12 countries currently supported by Swedish DAH. Growth per capita is projected to be particularly strong for Bangladesh, DR Congo, India, South Sudan, Tanzania, and Uganda.

The list of countries supported by Sweden would depend on the DAH eligibility criteria that Sweden adopts. A number of different graduation ‘cut-offs’ have been

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1 After the analysis was completed we learned from the budget bill for 2015 that Sweden plans to re-open its bilateral cooperation with Burkina Faso and Bolivia. Since details of this cooperation were not known at the time of the analysis (e.g. it is unclear whether the cooperation will cover the health sector), we have not included these countries in our analysis.
suggested. For example, for 2014, the ‘cut-off’ for GAVI support was set at US$1,570, while the limit for World Bank International Development Association (IDA) eligibility was US$1,205. If GAVI’s cut-off were to remain at US$1,570 by 2035, and if Sweden were to follow GAVI’s graduation threshold, we estimate that only four of the 12 countries currently supported by Sweden would still be eligible for Swedish health aid by 2035 (DR Congo, Tanzania, Uganda, Zimbabwe).

Sweden’s bilateral health engagement has shown a good deal of flexibility over time. Sweden could continue to sharply focus its bilateral aid on the poorest countries, balancing that objective against other factors, such as targeting assistance to well-governed countries.

(iv) Proportion of bilateral support directed towards global and local functions

We examined Sweden’s bilateral DAH to estimate the proportions that support global versus local functions. To estimate the funding for global and local functions from bilateral health assistance, we used disbursement data from the OECD Creditor Reporting System (CRS). Due to availability of data at the time of the analysis we focused on disbursements for 2012.

The CRS database does not itself distinguish between DAH for global versus DAH for local functions, so we needed to develop a methodological approach that would allow us to produce a robust enough estimate. We describe the steps we took below, which are summarized in Figure 4.

We used the CRS database to filter Swedish DAH by geographical focus. The CRS database shows how much of Sweden’s bilateral DAH is directed at the following.

(a) Specific country projects—donor governments typically report that about 60–80 per cent of their bilateral DAH is for such country projects. For the purposes of our analysis, we classified this funding as support for local functions.

(b) ‘Unspecified bilateral ODA’\(^2\) (or ‘developing countries, unspecified’) —in the CRS database, this category is supposed to capture projects that benefit

\(^2\) ODA is official development assistance.
multiple regions (see www.oecd.org/dac/stats/crsguide.htm). Our analysis found that donors generally report about 20–40 per cent of their bilateral funding as ‘unspecified.’ To assess how much of this ‘unspecified bilateral ODA’ was funding for global versus local functions, we conducted a fine-grained ‘project-by-project’ analysis of those projects categorized as bilateral unspecified funding. Guided by the classification of DAH into support for global versus local functions (Table 1), the project team manually reviewed the information contained in project titles, short descriptions, and long descriptions of each of the projects in the CRS database to assess the extent to which each project contributes to global functions. When information included in the CRS was insufficient to make a sound assessment, the project team conducted additional research and analysed documents provided by donors, including annual reports, project reports, websites, and budget documents. The coding was conducted by a team of three researchers. To ensure consistency, regular reviews of allocations among the research team were held. Uncertainties were discussed between the researchers and other co-authors until a consensus was reached. Table 7 provides examples of projects and initiatives funded by Swedish bilateral DAH, and the bilateral DAH of other donors, that support global functions.
The analysis showed that around 85 per cent (1,475 MSEK) of Sweden’s bilateral health aid in 2012 was for local functions and 15 per cent (260 MSEK) for global functions (Figure 5).

(v) Comparison of Sweden’s bilateral assistance with that of other donors

We compared Sweden’s bilateral assistance with that of four other donors: Canada, the Netherlands, Norway, and the UK. We chose these donors because they are considered as having a shared interest, with Sweden, in improving aid effectiveness; they are members of an informal group called the ‘like-minded’ or ‘Nordic plus’ donors (Japan International Cooperation Agency, 2009). This analysis is summarized in Figure 5, which shows that most bilateral assistance from all five countries supports local functions. On average, the five donors devote around 16 per cent of their bilateral funding to global functions and about 84 per cent to local functions; the range is between 7 per cent (Canada) and 32 per cent (Norway), with Sweden allocating 15 per cent.

As shown in Table 8, for all five donor countries, the highest proportion of bilateral health ODA devoted to global functions is directed at providing global public goods. The very high proportion for Canada is due in part to its US$34.4m disbursement in 2012 to the Development Innovation Fund for Global Health Research; the high proportion for Sweden is also in large part due to its support for R&D. The UK is a major contributor to managing cross-border externalities through its disbursement of...
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Figure 5: Breakdown of 2012 shares of bilateral health assistance into global and local functions for Norway, Sweden, the UK, Netherlands, and Canada (amounts in million SEK)

| Donor      | % of bilateral DAH devoted to global functions | Amount devoted to global functions, US$m | Breakdown of global functions (%) |
|------------|-----------------------------------------------|----------------------------------------|----------------------------------|
| Norway     | 32                                            | 67.8                                   | Global public goods: 44; Managing externalities: 13; Leadership or stewardship: 43 |
| UK         | 16                                            | 274.3                                  | Global public goods: 57; Managing externalities: 34; Leadership or stewardship: 9 |
| Sweden     | 15                                            | 41.7                                   | Global public goods: 63; Managing externalities: 14; Leadership or stewardship: 23 |
| Netherlands| 11                                            | 30.3                                   | Global public goods: 48; Managing externalities: 7; Leadership or stewardship: 45 |
| Canada     | 7                                             | 49.9                                   | Global public goods: 88; Managing externalities: 9; Leadership or stewardship: 3 |

Source: Own calculations based on OECD creditor reporting system data. Results have been rounded.

US$63.4m to the Global Polio Eradication Initiative in 2012. The Netherlands and Norway spend about two-fifths of their bilateral health aid on leadership/stewardship, and Sweden spends about a quarter, but the other two donors spend under 10 per cent.

(vi) Total Swedish health aid according to function

Overall, the share of Swedish DAH that supports global functions is estimated at only about 18 per cent (Figure 6). In Section IV, we discuss the implications of this low proportion.

(vii) Projected growth of Swedish DAH

We estimated the possible growth in Swedish health aid, assuming 2.5 per cent real GDP growth and assuming that the share of GDP devoted to aid remains constant (Figure 7). Our projections included three scenarios:
scenario 1: the additional DAH (the ‘DAH increment’) remains at 13 per cent of the total aid increase (i.e. health aid remains as it is today, at 13 per cent of total Swedish aid);
scenario 2: the DAH increment rises to 25 per cent of the total aid increase;
- scenario 3: the DAH increment rises to 50 per cent of the total aid increase.

As shown in Figure 7, even under the most conservative scenario (scenario 1), an additional 3,000m SEK per year in health aid will be available in 2035 compared to 2013. Under scenario 3, an additional 11,500m SEK per year would be available. Scenario 3 is perhaps overly optimistic, but we believe that there are good arguments for increasing the proportion of total aid that is targeted to DAH. As described earlier, health aid has a strong record of demonstrating measurable results (Flaxman et al., 2010; Murray et al., 2014) and the returns to investing in the health sector have historically been very large (Jamison et al., 2013).

In section IV, we discuss how these additional funds could be used to strengthen Sweden’s contribution to achieving grand convergence; supporting pandemic preparedness and tackling antibiotic resistance; curbing NCDs and injuries; and reducing medical impoverishment. We have not put a price tag on the policy options we present. The calculation of the anticipated health aid trajectory should rather be viewed as an exercise to illustrate what levels of funding could become available over the next 20 years to give an idea of the potential scope of additional activities.

IV. Discussion

In the final section of our paper, we begin by summarizing the key findings and discussing their broad implications for the future directions of DAH. Next, we lay out some general principles for guiding the evolution of Swedish DAH. We introduce the concept of local DAH being ‘replaceable’ or ‘less replaceable’ and discuss the implications of this concept for the future of DAH. We briefly lay out a suite of policy options for how

Figure 8: WHO’s regular budget from 1990 to 2010

Source: Data from IHME (2013).
Swedish DAH could be directed at global versus local functions to help address the four major challenges of the post-2015 era: achieving convergence; the consequences of microbial evolution; curbing NCDs and injuries; and promoting pro-poor UHC as a way to reduce medical impoverishment. Finally, we conclude our paper with a discussion of the next phase of our research on the functions of DAH.

(i) Key findings and their implications for global health assistance

There are a number of key findings from our analyses in sections I–III that have potential implications for the future of Swedish DAH and DAH more broadly.

- Sweden’s current multilateral DAH is mostly supporting local functions. In 2012, 79 per cent of Sweden’s support (1,840m SEK out of 2,284m SEK) to five major multilateral financing institutions—the Global Fund, GAVI, UNICEF, UNAIDS, and UNFPA—was channelled to local functions. While Sweden has recently increased its multilateral health aid, in particular its support to Global Fund, GAVI, and UNFPA, these organizations mainly support local functions.

- Similarly, Sweden’s current bilateral DAH is mainly supporting local functions. In 2012, 85 per cent of Sweden’s bilateral DAH was for local functions (1,475m SEK) and 15 per cent for global functions (260m SEK).

- Overall, in 2012, about 82 per cent of Swedish DAH was directed at local functions.

- This inclination towards funding local functions is also true for the bilateral DAH of the four other donors that we analysed.

- Several low- and middle-income countries currently supported by Swedish bilateral DAH are likely to graduate from aid by 2035, potentially freeing up funds that could be directed towards global functions.

- We also find that, even under conservative scenarios, an additional 3,000m SEK per year in Swedish health aid will be available in 2035 compared to 2013.

A key question facing all donors is whether their DAH portfolios will need to evolve in the post-2015 era to meet the next set of global health challenges. Global Health 2035 argued that there will be four major global health challenges over the next generation (Jamison et al., 2013). The first is the convergence agenda, i.e. addressing the ongoing burden of preventable deaths from infections and maternal and child deaths that persists in LICs and LMICs. The second is microbial evolution, especially the threat of a new influenza pandemic and of antimicrobial resistance, both of which will require scaled-up R&D efforts to develop a universal influenza vaccine, other influenza control tools, and new antibiotics and antimalarials. The third is the global crisis of NCDs and injuries. The fourth is catastrophic medical expenses pushing households into poverty. Around 150m people each year suffer financial catastrophe due to medical expenses (Xu et al., 2007), and about one-quarter of households in low- and middle-income countries sell items or borrow money to pay for health care (Kruk et al., 2009).

A central argument in Global Health 2035 is that meeting these post-2015 challenges will require increased support for three key global functions: (i) providing global public goods (especially R&D), (ii) managing externalities, and (iii) fostering leadership and stewardship (including functions such as aid coordination and prioritization of global
Global Health 2035 noted that ‘the rapid economic growth of many middle-income countries means that supportive functions (particularly the transfer of DAH to countries) will become less important over time’. Even though global functions are becoming increasingly important, investments in these functions have been relatively neglected by the donor community. In an analysis of DAH flows from 1990 to 2012 conducted for Global Health 2035, Blanchet et al. (2013) found that health aid was increasingly targeted at local functions. This was an unexpected finding—the authors had expected to find that such assistance would increasingly be devoted to core functions as LICs underwent economic development. Our own analysis of Swedish DAH, and the DAH of four other donors, suggests a heavy dominance of supportive functions.

The WHO’s slow response to West Africa’s Ebola crisis is one very recent example of the consequences of neglecting global functions. As some of us have recently argued (Summers and Yamey, 2014):

The WHO’s slow response to Ebola was not surprising, given its recent staff cuts. For that, we all share the blame. Since 1994, the WHO’s regular budget has declined steadily in real terms. Even before the Ebola crisis, it struggled to fund basic functions. Figure 8 shows WHO’s falling budget. Just as concerning is the under-funding for pandemic influenza preparedness. In a background paper prepared for the 2014 World Development Report, Jonas estimated that there is a 1–3 per cent annual risk of a flu pandemic, that a single severe influenza pandemic could cost US$3 trillion, and that the annual financial risk is at least US$30 billion (Jonas, 2014). Yet the WHO’s annual influenza budget in 2013 was just US$7.7m, less than a third of what one city—New York—spends on its public health preparedness (The Economist, 2013). The World Bank (2013) recently estimated that the cost of building a pandemic preparedness system across all LMICs would be around $3·4 billion annually—yet in 2013, donor spending on management of cross-border externalities totalled just $1 billion (Schäferhoff et al., 2015).

(ii) Aligning Swedish DAH with post-2015 challenges: principles and policy options

The under-funding of global functions will have to be addressed in the post-2015 era in order to tackle the four health challenges laid out above—especially achieving grand convergence and tackling microbial evolution. Donors are under-investing in global public goods, especially R&D, and in managing cross-border externalities (as shown in Table 8). We believe that over time, DAH should focus more on investment in high priority global functions.

Such a transition will need to occur slowly. Sudden shifts would cause disruption to health programmes, including HIV or malaria control programmes, with adverse consequences, such as malaria resurgence (Evidence to Policy Initiative et al., 2011; Cohen et al., 2012). The transition can be achieved by (a) investing incremental health aid in global functions, while also, (b) over time, redirecting health aid from local to global functions, i.e. redirecting DAH that is currently funding local functions in countries that will increasingly be able to provide these resources by themselves (such local DAH could be considered as ‘replaceable’—fundable by countries when they become wealthier).
However, not all local DAH can be considered easily replaceable. For a number of local functions, some countries would face challenges in having to fund these entirely themselves. We believe that there are at least two types of these ‘less replaceable’ local functions.

The first type of ‘less replaceable’ local DAH is support given to a country that has clear trans-national benefits. An example is local DAH given to a middle-income country to support malaria elimination. Based on their recent economic growth and new middle-income country (MIC) status, some countries that are aiming for elimination have or will soon be graduating from DAH. But financing of an internationally coherent strategy to eliminate malaria will need to provide support to MICs. As Global Health 2035 argued:

> Progressive elimination of malaria cannot be achieved just by financing malaria control in the poorest, highest burden countries of sub-Saharan Africa. It will also require financial support to eliminating countries that have shown good progress and that now have low burdens, many of which are middle-income countries.

Another example is DAH given to a country to build national capacity on disease and risk factor surveillance systems.

A second type of ‘less replaceable’ local DAH is support for vulnerable groups (e.g. refugees) and politically problematic services (e.g. family planning, which some governments do not support).

Below, we propose a number of policy options in support of the Global Health 2035 goals for consideration and debate by key stakeholders—we categorize these options into investment in global functions; ‘replaceable’ local functions; and ‘less replaceable’ local functions. In Table 9, we give a set of overarching principles in considering the channelling of DAH between 2015 and 2035. In Table 10, we briefly lay out a series of policy proposals for aligning Swedish DAH with the four key post-2015 health

### Table 9: Potential alignment of DAH with post-2015 global health challenges: overarching principles

| Policy considerations | Investment in global functions | Investment in ‘replaceable’ local functions | Investment in ‘less replaceable’ local functions |
|------------------------|--------------------------------|-------------------------------------------|------------------------------------------------|
|                        | Funding should be directed to  | Funding should primarily be directed to    | The replaceability of funding should be analysed |
|                        | global functions that (a) have | countries that fall below an agreed        | as a criterion for external financing (if the      |
|                        | the greatest potential impact   | eligibility threshold (e.g. based on World | function can be easily funded domestically, it is |
|                        | (e.g. R&D) and (b) face a     | Bank income classification or IDA eligibility| less likely to warrant DAH)                             |
|                        | funding shortfall              | Funding could be given to countries above  | Funding should be directed to under-funded functions |
|                        | Funding should follow from    | this eligibility threshold, but should     | that have the greatest potential impact            |
|                        | Sweden’s particular interests  | then ideally be targeted at the poorest,   | Funding should be coupled with dialogue to influence |
|                        | and strengths                  | most vulnerable sub-populations            | policy change                                       |
|                        | Funding should be directed at  | Dialogue should be initiated to influence   |                                                |
|                        | institutions or organizations (| countries to focus spending tightly on the  |                                                |
|                        | or specific initiatives or   | highest burden disease priorities        |                                                |
|                        | departments within           |                                            |                                                |
|                        | organizations) that have     |                                            |                                                |
|                        | demonstrated their           |                                            |                                                |
|                        | effectiveness                |                                            |                                                |
| Post-2015 health challenge | Sweden’s strengths in tackling the challenge | Investment opportunities for Swedish DAH: global functions | Investment opportunities for Swedish DAH: local functions |
|---------------------------|---------------------------------------------|------------------------------------------------|--------------------------------------------------|
| 1. Achieving a grand convergence around infections and reproductive, maternal, newborn, and child health (RMNCH) conditions | Supports scale-up of sexual and reproductive health services, family planning, midwifery, safe abortion; supports a human rights perspective that strengthens scale-up and includes marginalized groups | Invest in global functions conducted by major multilateral agencies (Global Fund, GAVI, UNFPA, UNAIDS, UNICEF), e.g. pooled procurement, market shaping, data collection, research | Enhance support to international NGOs, e.g. International Planned Parenthood Federation |
| (a) Low coverage of evidence-based interventions for infections and RMNCH | | | |
| (b) Under-funding of R&D for infections and RMNCH conditions that disproportionately affect LICs and MICs | Supports infectious disease research, including HIV vaccine and microbicide development | Step up commitments to infectious disease research | ‘Less replaceable’ local functions: Build national capacity to conduct research on infections and RMNCH conditions that has global value (e.g. on delivery methods for scaling up control tools) |
| (c) Under-investment in health by national governments of LICs and MICs | Strong performance in fostering national priority-setting | | Initiate a dialogue on focusing increased domestic health spending on high burden infections and RMNCH conditions |
| 2. Preparing for the next influenza pandemic and tackling the consequences of antimicrobial resistance | International leader in controlling antibiotic resistance domestically and internationally (e.g. through the ReAct network, www.reactgroup.org); pandemic preparedness is a specific priority in Sweden’s current global development policy | Fund coalition of international and Swedish universities, health system providers, and private-sector actors to ramp up global surveillance and control of antibiotic resistance; Catalyse consortium of donors to build a critical mass of engaged funders | ‘Less replaceable’ local functions: Build national capacity on infectious disease surveillance, including surveillance of antimicrobial consumption and resistance, which has benefits that go beyond national boundaries |
| | | Finance global and Swedish R&D on flu drugs, vaccines, and diagnostics, and surge production capacity for flu vaccine in Sweden | |
challenges discussed above. Our aim is not to be prescriptive, but to provide a range of suggested policies that could have a transformative impact over the next 20 years.

In our proposals, we were mindful of the need to try to link post-2015 challenges with the strengths of Sweden as a donor in health. Global health is a core priority for Swedish development assistance, and there is clearly an opportunity for Sweden to build on its reputation in this development sector. Sweden is an active, visible, and influential donor within the global health landscape. It has gained a reputation for impact

| Post-2015 health challenge | Sweden’s strengths in tackling the challenge | Investment opportunities for Swedish DAH: global functions | Investment opportunities for Swedish DAH: local functions |
|----------------------------|---------------------------------------------|----------------------------------------------------------|--------------------------------------------------------|
| 3. Curbing NCDs and injuries | Spends increasing political capital in highlighting crisis of NCDs (Nordström, 2013); Sweden is an ‘international leader in the area of road safety’ (Goodyear, 2014) | Global advocacy for control of NCDs and injuries | Targeted financing to help introduce cost-effective NCD interventions |
|                            |                                             | Support shared learning on NCD and injury control | Build national capacity on disease and risk factor surveillance systems |
|                            |                                             | Fund a programme of R&D to adapt health tools for local conditions (e.g. developing heat-stable insulin) and to support countries to achieve WHO pre-qualification of locally manufactured products | ‘Less replaceable’ local functions: Build national capacity in conducting NCD research with a global value, e.g. on population and economic factors, policies, and delivery methods for scaling up NCD intervention |

4. Tackling impoverishment from medical expenses by promoting pro-poor universal health coverage | Sweden co-chaired the Thematic Consultation on Health in the Post 2015 Development Agenda, which advocates strongly for UHC | Support to national institutions to develop mechanism for revenue mobilization and pooling and for designing benefits package | ‘Less replaceable’ local functions: Build national capacity in conducting research on UHC that has global value, e.g. on UHC implementation and on monitoring and evaluating equity and health impacts of efforts to achieve UHC |

Notes: RMNCH: reproductive, maternal, newborn, and child health; LICs: low-income countries; MICs: middle-income countries; NCDs: non-communicable diseases; UHC: universal health coverage. aSee http://www.government.se/content/1/c6/15/27/91/ea0dc207.pdf; bSee http://www.worldwewant2015.org/health
in global health in the areas of sexual and reproductive health and rights, including in the provision of contraception and safe abortion services (Seims, 2011), midwifery (e.g. Sweden provides major support to UNFPA that is primarily for midwifery), and tackling antibiotic resistance (Struwe, 2008). It has a growing commitment to and reputation in tackling NCDs and injuries, including through road traffic safety (Goodyear, 2014). While it also has a strong reputation in its support for research on infectious diseases that disproportionately affect low-income countries and middle-income countries, the overall funding level remains relatively small—about 200m SEK annually.

The suggested policy options outlined in Table 10 could help to (a) align Swedish DAH with the goals and targets of Global Health 2035 and (b) set a ‘catalytic’ example to other bilateral donors. Several of the recommendations target areas that have implications beyond the realm of DAH. For example, tackling antibiotic resistance and preparing for a severe influenza pandemic are global concerns for both rich and poor countries and for multiple sectors beyond health. Financing for such efforts is therefore a responsibility that stretches beyond donor countries’ development budgets in general and DAH in particular.

(iii) Future research directions

Our analysis has focused mostly on a single donor as a case study, and mostly on a single year of that donor’s spending on health aid. A fuller picture of the relative support for global versus local functions will require an analysis of a wider range of donors over a longer period of time.

Another caveat is that our approach only included research funding classified as ODA. There is additional research funding of particular relevance in low-income countries that is not reported as ODA and thus not captured in our analysis. In a follow-on analysis that we conducted subsequent to this case study on Sweden, we attempted to overcome this limitation by examining both ODA for health and donor spending on R&D for diseases of poverty (Schäferhoff et al., 2015). We use the term ‘ODA plus’ to denote the combination of health ODA and donor spending on such R&D. We estimate that donor spending on ODA plus was $22.0 billion in 2013 (compared with $20.5 billion for health ODA alone).

Similarly, our analysis does not cover aid provided from countries that are not DAC members, for example China, nor does the analysis cover private-sector contributions.

In section IV (ii), we introduced the notion of local DAH—that is, DAH from donors to low- and middle-income countries—as being ‘replaceable’ and ‘less replaceable’. Local ‘replaceable’ functions refers to functions that could easily and reasonably be paid for by LICs and MICs themselves once their economies grow and their domestic financing for health increases (e.g. DAH for maternal health services). As mentioned, ‘less replaceable’ local DAH refers to DAH that has transnational benefits or DAH that supports vulnerable populations or politically problematic services. In our future research, we aim to further define these ‘less replaceable’ functions and we hope to use the CRS database to try and estimate current donor spending on these functions. For example, ‘less replaceable’ local DAH with transnational benefits supports countries in the following.
(a) **Helping to provide global public goods.** Examples include: support to countries for R&D of new health tools; development and harmonization of internal health regulations; knowledge generation and sharing; sharing of health-related intellectual property; and market shaping (e.g. interventions to reduce drug prices).

(b) **Dealing with cross-border externalities.** Examples include: supporting pandemic preparedness and response through surveillance, information sharing, and regulations to manage outbreaks; responding to antimicrobial resistance, including to counterfeit drugs; responding to the marketing of unhealthful products, such as tobacco, alcohol, sugar; and controlling cross-border disease movement.

(c) **Providing global leadership and stewardship.** Examples include support for global health advocacy and priority setting, and promotion of aid effectiveness and accountability.

Finally, an important avenue for future research will be to estimate comprehensively the costs of supporting local functions as well as the global functions listed as (a)–(c) above. There have been some initial estimates of the costs of selected components of the list. For example, as mentioned above, the World Bank (2013) has estimated the cost of building a pandemic preparedness system in LMICs. The WHO Consultative Expert Working Group on R&D Financing and Coordination estimates that an additional $3 billion per year is needed to finance R&D for neglected diseases of poverty (Rottingen and Chamas, 2012). It will be important to build on these initial analyses to get a full costing estimate for the global functions of DAH.

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