Analyzing donor funding flows in support of Health Policy and Systems Research in Low- and Middle-Income Countries from 2000-14

Abstract

The need for sufficient and reliable funding to support Health Policy and Systems Research (HPSR) in Low- and Middle-Income Countries (LMICs) has been widely recognized. Historically, most resources to support such activities have come from traditional development assistance for health (DAH) donors; however, few studies have examined the levels, trends, sources, and national recipients of such support --- a gap this research seeks to address. Using the OECD's Creditor Reporting System (CRS), we classified data on donor project commitments using a keyword analysis of the project descriptions to estimate total funding available for HPSR annually from bilateral donors, multilaterals donors, and the Bill and Melinda Gates Foundation over the period 2000-14. Overall we found that approximately 21% of all health aid projects over the investigated time period targeted HPSR activities, but only 2% of total aid was spent on HPSR. In total almost $4 billion in 2014 USD were committed by donors to these projects over 15 years (an average of $266 million a year over the whole time period or $433 million a year over the last 5 years). While there have been increases in total funding for HPSR activities through 2010, HPSR activities have declined as a total share of all health aid activities since then. The United States, the Global Fund, the BMGF, and the World Bank were the largest donors to HPSR activities over the study time period. However, funding was also highly concentrated among the top 10 donors who provided nearly 93% of all financial support to HPSR activities. Future advocacy efforts should be targeted to increase such resources.

1. Introduction

Health policy makers and program managers the world over have increasingly recognized the importance of Health Policy and Systems Research (HPSR) in providing evidence on how to best strengthen health systems and the field has witnessed rapid development in recent years (Sheikh et al., 2011). HPSR is defined by the Alliance for Health Policy and Systems Research (herein the Alliance) as the production and application of knowledge to improve how societies organize themselves in order to achieve health goals (World Health Organization, 2007). It encompasses research on how societies plan, manage and finance health services and the role and interests of different actors in the health system. It is both multi- disciplinary and inter-disciplinary in nature (Gilson et al., 2011). While the role of HPSR has been recognized in strengthening health systems, the recent Ebola epidemic highlighted the need to further generate generalizable lessons on how to build stronger, more resilient health systems (Ghaffar, Tran, Røttingen, & Kieny, 2014; Kruk, Myers, Varpilah, & Dahn, 2015; Sheikh et al., 2011; World Health Organization, 2012).

Continued growth and development of the field will depend on the availability of adequate and reliable funding to support HPSR activities. Despite calls for increased investments in HPSR in low- and middle-income countries (LMICs), reliable and accessible information on funding for HPSR at the global level is limited and thus little is known about the level, trends, sources, and recipients of such funding flows (Bennett et al., 2008). As the field of HPSR continues to expand, tracking and understanding the funding flows to support such activities is critical both to inform decision-makers and to serve as the basis for future advocacy efforts.

This chapter summarizes the methods and findings of a new approach developed to track and monitor international financing in support of HPSR activities from donor governments, multilaterals, and select private donors to LMICs. It analyzes trends and patterns in funding flows to support HPSR activities 2000-14. Section two reviews evidence on the current state of knowledge of HPSR funding and the methodological challenges inherent in estimating resource flows for HPSR. Section three details the approach employed in this chapter to identify and track resource flows for HPSR. Section four describes the key patterns for recent funding in support of HPSR. The final section discusses the implications of these findings, the limitations of the methodology, and future directions.

2. Background

There have been a few previous efforts to track funding for HPSR, all of which have been based on the use of web-based surveys of institutions and actors involved in financing

or conducting HPSR activities in LMICs. The Alliance itself has conducted surveys of institutions producing health systems research in developing countries to estimate annual funding for HPSR. The first phase of the survey, initiated in 2000, targeted Alliance institutional partners in developing countries and the second phase in 2003 surveyed institutions producing health systems research in 82 developing countries. The survey found that the primary source of funding for health systems research was from international donors (Alliance for Health Policy and Systems Research, 2004).

Bennett et al. (2008) conducted a follow-up survey of international research organizations of health research to investigate trends in donor funding for HPSR among 19 organizations—ten bilateral donors, five foundations, and four multilateral organizations. In that survey, they found that research institutions in LMICs (N=106) received an average of 5.2 grants, compared to 12.4 grants in HICs. Furthermore, the median grant size in HICs was $675,00, nearly 30 times that of LMICs. Adam et al. (2010) surveyed 96 research institutions and attempted to update the findings from the same surveys undertaken in 2003 and 2008. The average grant size in LICs increased from $154,897 in 2008 to $397,756 in 2010. By comparison, over the same period, average grant size in MICs decreased from $154,444 to 137,135 and in HICs from $1,841,586 to $763,210. Despite the increase in funding allocated to LICs their findings suggest that limited availability of financial resources remains a barrier to HPSR and resources available in LICs are primarily funded by international and bilateral organizations—70% to 80% of total funds by their estimates. All of these studies have generally confirmed the central role of traditional development assistance for health (DAH) donors in supporting HPSR activities, in particular in LMICs. However, survey based estimates may suffer from important selection effects based on which groups were approached to answer the survey and who actually completed the survey. Plus, the methods in those studies require primary data to be collected in an ongoing way to generate estimates over time.

Another strand of the global health policy literature has developed methods to track and analyze trends in donor financing for health activities in LMICs (Dieleman et al., 2015; 2016; McCoy, Chand, & Sridhar, 2009; Ravishankar et al., 2009). At the base of all these studies, is the use of large internationally comparable databases on donor financing, primarily the Creditor Reporting System (CRS), which is maintained by the OECD's Development Assistance Committee (DAC) (Grépin, Leach-Kemon, Schneider, & Sridhar, 2012). Recent innovations in the literature have included the development of a keyword search methodology to determine the likely health focus area of global health aid allocation within countries (Dieleman et al., 2015). Using this methodology, the IHME has estimated that donors provided $2.4 billion in financing in 2014 to support "SWAPs and health system strengthening activities", although not necessarily to health system strengthening research or HPSR activities specifically.

Quantifying financial resources in support of HPSR at the global, regional, and national level using donor datasets is challenging for a number of reasons. First, HPSR

covers a broad set of issues and activities, many of which are done alongside other activities and donors may use different terms to describe such activities. In their documentation, funding agencies may not define funding explicitly as HPSR but rather operational research, implementation research, program monitoring, or evaluation activities. As well, many HPSR activities may be components of larger health projects and thus may not be prominently described. Most donors do not break down funding for specific health activities in their financial statements, making it difficult to parse out resources allocated specifically for HPSR (Bennett et al. 2008). In addition, the landscape of health donors has expanded in recent years to include a large and diverse number of actors including public and private institutions, many which do not provide comparable data on funding flows to allowed detailed analysis (Ravishankar et al 2009). Not all donors, in particular newer global health donors, report to traditional datasets and thus are underreported in most donor financing estimates (Fan, Grépin, Shen, & Chen, 2014; Grépin, Fan, Shen, & Chen, 2014).

In this chapter we report on a new methodology developed to track and monitor donor resources for HPSR activities. The method begins with the key documents and publications produced by the Alliance on HPSR activities to develop a list of keywords most frequently used to describe HPSR activities. Then, similar to the IHME, it develops a keyword search algorithm to classify aid project transactions into HPSR activities on an annual basis. We also report on additional quality assurance steps undertaken to ensure the projects identified represented true HPSR activities.

2. Data and Methods

Data

Our primary source of data was the Creditor Reporting System (CRS), which is the most well established and widely used source of data on development aid and which is maintained by the Organisation for Economic Co-operation and Development (OECD) (Grépin et al., 2012). The CRS provides annual transaction-level data on aid projects from bilateral aid agencies in 29 countries and multilateral funders such as the World Bank, the Asian Development Bank, the Inter-American Development Bank, the African Development Bank, the United Nations Children's Fund (UNICEF), the UN Population Fund (UNFPA), the Joint UN Programme on HIV/AIDS (UNAIDS), GAVI, and the Global Fund to Fight AIDS, Tuberculosis and Malaria. Since 2009, the CRS also includes grants from the Bill & Melinda Gates Foundation, which voluntarily reports to the CRS. Appendix Table 1 provides a list of donors included in the CRS database.

Projects in the CRS database are categorized into programmatic areas. For the purposes of this study, we used data on all development assistance for health, which includes the sum of CRS sector codes 120 (health), 130 (population including HIV), and

160.64 (social mitigation of HIV), a relatively standard approach that has been widely used in the global health policy literature (Grépin, 2012). Appendix Table 2 provides more information on the organization of the data in the CRS.

In the CRS, annual commitment and disbursement transactions for active donor projects are recorded. For each transaction, it is possible to identify the donor agency, the recipient country, and the value of that annual transaction. Each project usually also has a project title, a short description, and a longer description of the project in the project-level CRS database. A commitment is a firm written obligation by a government or official agency, backed by the appropriation or availability of the necessary funds, to provide resources of a specified amount under specified financial terms and conditions and for specified purposes for the benefit of a recipient country or a multilateral agency. A disbursement is the actual payment made against a previous commitment. To estimate annual donor funding for HPSR activities, we tracked commitments rather than disbursements because there are many factors that contribute to delays between commitments and disbursements, many of which are related to factors in recipient countries rather than donors themselves. We also chose commitments as we feel that they better reflect donor agency priorities, rather extraneous factors such as budgeting shortfalls that may impact disbursements but may have little to do with the intended level of priority (Sridhar & Rajaie, 2008). In this report, all data from the CRS are reported in current 2014 US dollars.

Methodology

The methodology employed to quantify donor commitments for HPSR followed a multi-stage process to systematically categorize the CRS database by searching the content of individual project titles and descriptions for keywords thought to capture activities relevant to HPSR.

The first step required generating a list of relevant keywords. To do so, we conducted an automated text analysis of flagship publications by the Alliance available in English, French or Spanish. We identified the most frequently cited words and word combinations in these documents by converting these reports to raw text and analysing them using an online word frequency analyser. The preliminary list of keywords that was generated was further searched for words that were too general (e.g. “the”), not relevant (e.g. “paper”), or not specific enough (e.g. “global”), which were then deleted from the lists. Prior to carrying out the keyword search, we shared our keywords with leaders of the Alliance to ensure agreement with the list of keywords identified.

We then separated the keywords into keywords that represented health policy or heath systems (HPHS) activities from those that represented research activities. We then first searched all of the titles, short descriptions, and long descriptions of the projects in the CRS for evidence of HPHS activities and then within those identified projects, searched for

any of the research keywords. Those that had at least one HPHS keyword and one research word were then classified as HPSR projects.

We also examined the content of projects that did not include any HPHS keywords – roughly 44% of all health projects - to ensure that relevant projects in the dataset were not accidentally excluded from funding estimates. When relevant projects were identified, we added additional keywords to our HPHS and HPSR keyword lists to ensure that they were not missed in repeated searches. Additionally, we noticed a large number of multi-sector projects in the dataset that included funding for activities outside the health sector. We used a set of flag words for a number of topic areas ("immigration" "development policy" "poverty reduction" "nutrition" "sanitation") to identify specific multi-sector projects, such as World Bank poverty reduction support credits and structural adjustment credits. We reviewed projects descriptions that contained flag words and adjusted donor commitments to these projects according to the percentage of funding allocated specifically to health using donor documentation. The list of keywords used in the analysis is presented in Appendix Table 3.

In-depth Review

To verify that our identified HPSR projects were in fact capturing HPSR funding, we carried out additional in-depth analysis for a subset of projects. When possible, we went online to obtain individual donor project reports, donor financial documents, funding strategy papers and external evaluations of donor activities in the health sector, which were manually reviewed to determine the fraction of project dollar amounts that likely supported HPHS and HPSR activities.

Through our in-depth analysis, we found that HPHS and HPSR activities were frequently components of larger multi-sector projects or that the research component only likely represented a small fraction of the total health project. This was especially the case for projects funded by multilateral agencies such as the IBRD, IDA, and the Global Fund. Many projects funded by USAID—the top bilateral aid agency—included an array of activities, many of which we did not believe should be categorized as health systems or HPSR.

Based on findings from our in-depth analysis of specific projects and donor activities, we developed a set of assumptions for the top donors to attain more accurate estimates of development assistance committed to HPHR activities in LMICs. Appendix Table 4 details the assumptions applied and the methods used to allocate a percentage of project commitments to HPHS and HPSR. All of our estimates reflect these donor specific assumptions.

3. Findings

Trends of donor spending on HPSR (2000-2014)

Table 1 shows that out of the 332,952 health projects in the CRS from 2000-2014, 186,681 projects (56% of total) contained keywords relevant to HPHS activities in the title, short description or long description. Among the set of projects with HPHS keywords 69,187 projects (21% of all health projects) also included at least one research keyword and were classified as HPSR activities. Table 1 also summarizes the total amounts of funding given to each category of health aid over the same time period. From 2000-14, international donors committed over $246 billion USD in development aid to LMICs, of which roughly only 2% was committed to HPSR. Over the entire study period, the mean amount of annual funding given to HPSR was $266 million USD per year but was over $433 million USD per year over the last 5 years of the study period (2010-2014). Individual projects were relatively small: the average HPSR project received only $58,000 in funder per project per year. It is also worth nothing that estimates pre-2009 underestimate true funding levels for HPSR because the Bill and Melinda Gates Foundation (BMGF) did not begin reporting to the CRS until that year. From 2009 onwards, the figures also reflect aid from traditional bilateral donors, multilateral donors, and the BMGF.

Table 1: Number and value of projects for health, health policy and health systems, and health policy and system research

Year	number of projects			Value of projects (in 2014 $M USD)		
	health	hphs	hpsr	health	hphs	hpsr
2000	6,483	3,458	1,088	5083.72	882.11	75.66
2001	10,814	5,479	2,184	5413.94	939.58	113.39
2002	10,962	5,329	2,458	5929.01	796.09	79.39
2003	14,452	6,810	2,534	9624.01	1388.96	132.97
2004	13,727	6,617	1,930	9346.93	1228.97	100.54
2005	16,842	7,401	2,409	11840.82	1764.99	156.83
2006	20,799	8,798	3,220	15407.86	2142.77	242.79
2007	23,764	13,014	3,604	17055.26	2624.21	169.16
2008	25,133	13,876	4,292	19971.02	3112.20	251.38
2009	32,135	19,496	6,485	23677.78	4206.18	504.44
2010	30,990	18,783	8,096	23638.56	3812.31	540.51
2011	32,048	20,129	8,380	23038.13	3590.27	392.88
2012	31,101	17,316	7,389	23218.18	3861.19	384.77
2013	31,270	19,906	6,799	26903.25	4545.31	440.03
2014	32,432	20,269	8,319	25864.86	4895.30	410.58
Total	**332,952**	**186,681**	**69,187**	**$ 246,013**	**$ 39,790**	**$ 3,995**
% of all health	**100%**	**56%**	**21%**	**100%**	**16%**	**2%**

Source: Creditor Reporting System

Average funding per project per year	$ 738,885	$ 213,147	$ 57,747
Average funding per year, in 2014 $M USD (2000-14)	$ 16,401	$ 2,653	$ 266
Average funding per year, in 2014 $M USD (2010-14)	$ 24,533	$ 4,141	$ 434

Figure 1 graphically demonstrates these trends. Both total health funding and HPHS funding are charted using the left-hand axis, while HPSR funding uses the right-hand axis. While there were steady increases in both total health aid and all HPHS aid from 2000-14, aid for HPSR was more variable. Total HPSR funding was less than $100 million a year in 2000, it peaked at about $540 million in 2009, and then remained around $400 million a year through 2014. Since we are tracking commitments rather than disbursements, it is

not unusual that there are more year-to-year fluctuations in the data as it may reflect the announcement of large multi-year projects in a given year.

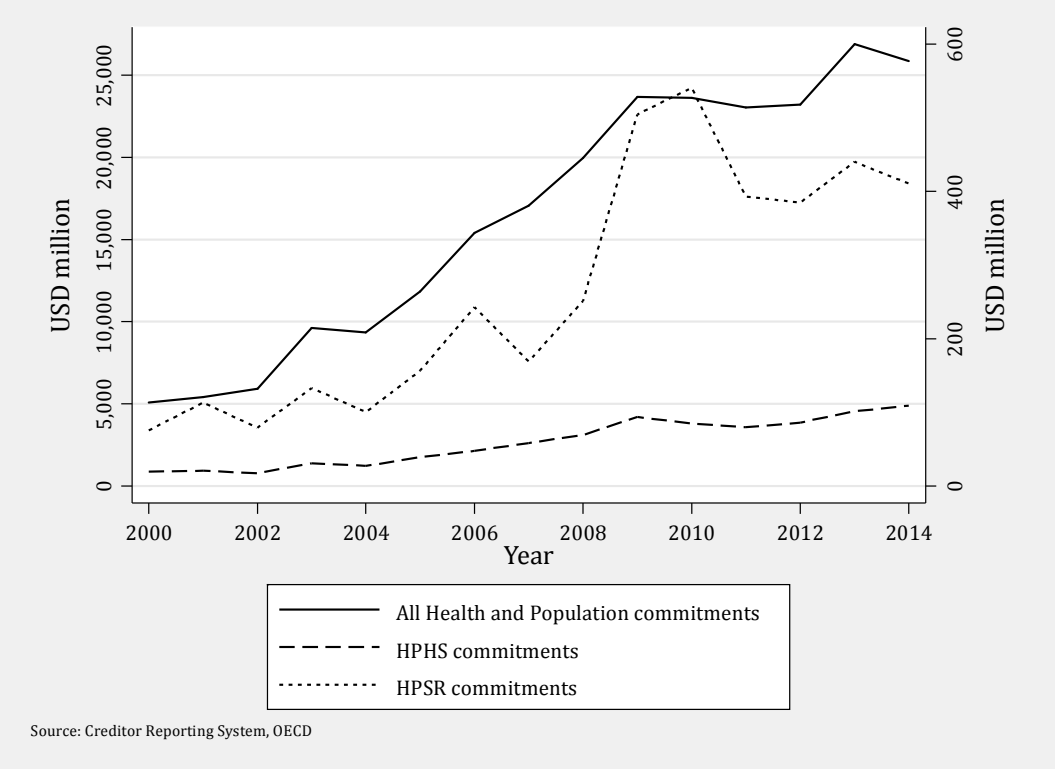

Figure 1: Trends in commitments for all health and HPSR activities, 2000-14

Figure 2 disaggregates commitments for HPSR according to donor type. We show data for the BMGF only post-2009, the year they began reporting to the CRS. Until 2008, bilateral and multilateral donors provided about the same amount of aid for HPSR. In 2009, there was a large jump in funding from multilateral donors. This jump was due to increased aid from the IBRD in response to the economic crisis and then declined substantially (over 50%) until 2012 when it began to increase again. After 2010, bilateral donors become the largest donors of funding for HPSR.

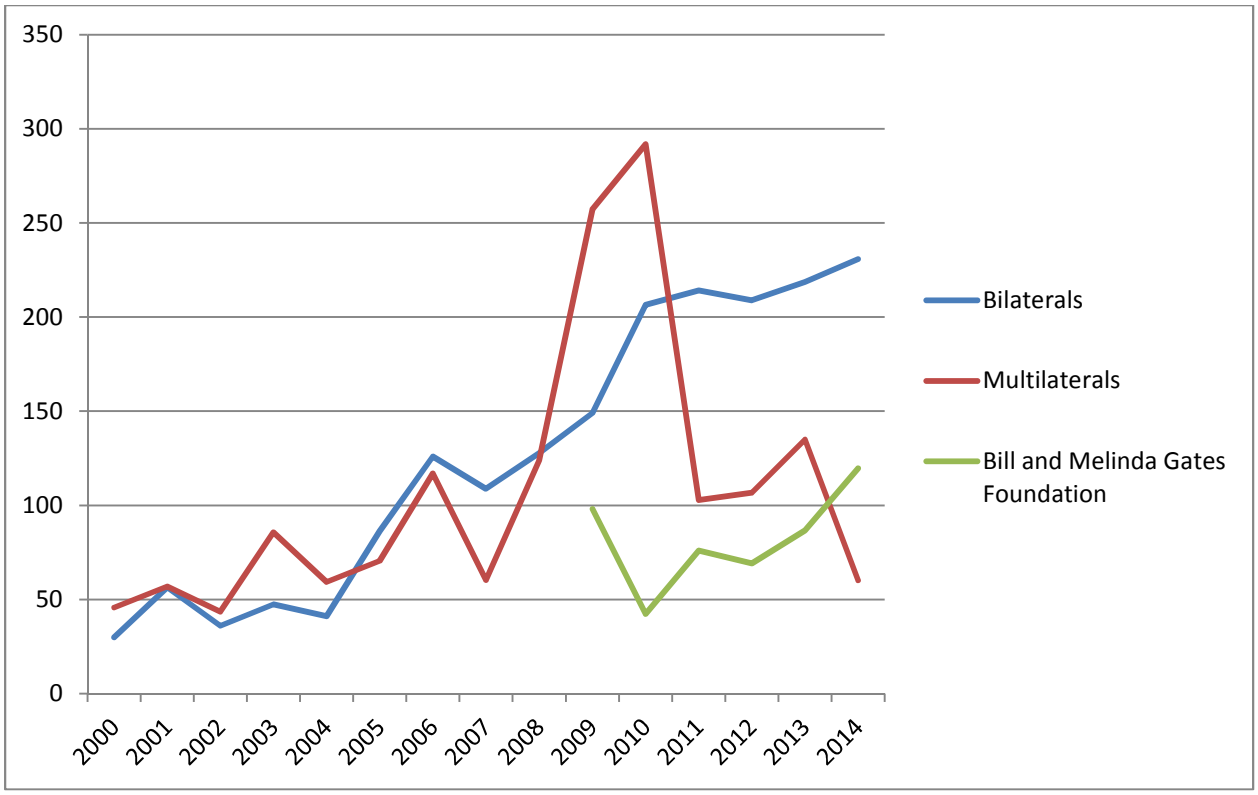

Figure 2: Trends in HPSR funding by donor type, 2000-14

Table 2 provides a ranking of the donors of HPSR funding from 2000-14. The top 10 donors (United States, Global Fund, BMGF, IBRD, IDA, Canada, United Kingdom, Norway, Australia, and France) accounted for 93% of total commitments to HPSR projects over the period 2000-14. It is notable that the BMGF ranked as 3rd overall, despite the fact that it did not report its aid to the CRS pre-2009. While there is some correlation between the top donors for HPSR and top donors from all aid, there are some exceptions, such as the BMGF, which provided proportionally more funding for HPSR than total health aid and the UK, which provided proportionally less aid for HPSR than total health aid.

Table 2: Top Donors of HPSR funding, 2000-14

Donor	Total commitments to health (2014 $M USD)	Total commitments to HPSR (2014 $M USD)
United States	72,438.7	1,262.6
Global Fund	29,317.9	574.9
Bill & Melinda Gates Foundation	10,357.7	491.7
International Bank for Reconstruction and Development [IBRD]	13,095.1	466.1
International Development Association [IDA]	15,736.3	428.2
Canada	6,327.8	214.9
United Kingdom*	15,180.9	123.2
Norway*	3,577.4	110.2
Australia	3,956.5	39.4
France	4,038.2	37.3
Sweden*	2,853.3	32.1
UNFPA	3,951.5	28.5
Inter-American Development Bank [IDB]	4,319.9	25.2
EU Institutions	8,192.3	22.8
UNAIDS	2,482.8	22.7
Ireland	1,614.6	17.4
Global Alliance for Vaccines and Immunization [GAVI]	7,521.2	17.4
Islamic Development Bank [IsDB]	1,815.5	17.2
Germany	5,729.9	16.4
Belgium	2,138.8	16.1

*Estimates include core contributions made to the Alliance for Health Policy and Systems Research

Figure 3 shows annual commitments to HPSR activities from the top 10 donors over time. The surge in US funding for HPSR after 2009 is primarily in the areas of malaria and tuberculosis control. Between 2009 and 2010, funding for malaria and TB control increased dramatically following the launch of President Obama's 6 year $63 billion Global Health Initiative, which focuses on strengthening health systems and targeted 80% of its funding commitments to HIV/AIDS, TB and Malaria (Kendall, 2012). HPSR funding from the Global Fund increased substantially after 2008. Although only shown from 2009 onwards, funding from the BMGF was consistently high throughout the entire reporting period.

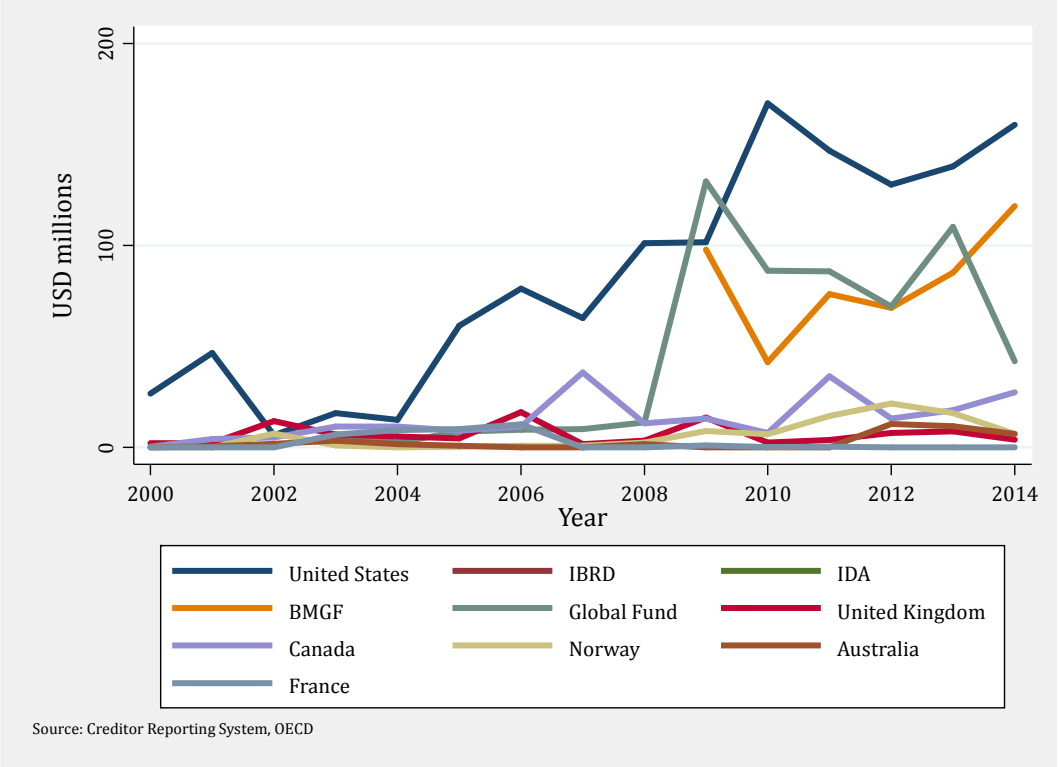

Figure 3: HPSR funding from top 10 donors, 2000-14

Figure 4 shows regional allocations of funding for HPSR. HPSR funding to countries in sub-Saharan Africa (SSA) more than doubled in the years following 2006, whereas commitments to other regions, with the exception of Latin America which received a short-term increase between 2009-20120, remained relatively stable. SSA countries were also the recipients of the largest amount of funding for HPSR activities (Appendix Figure 1).

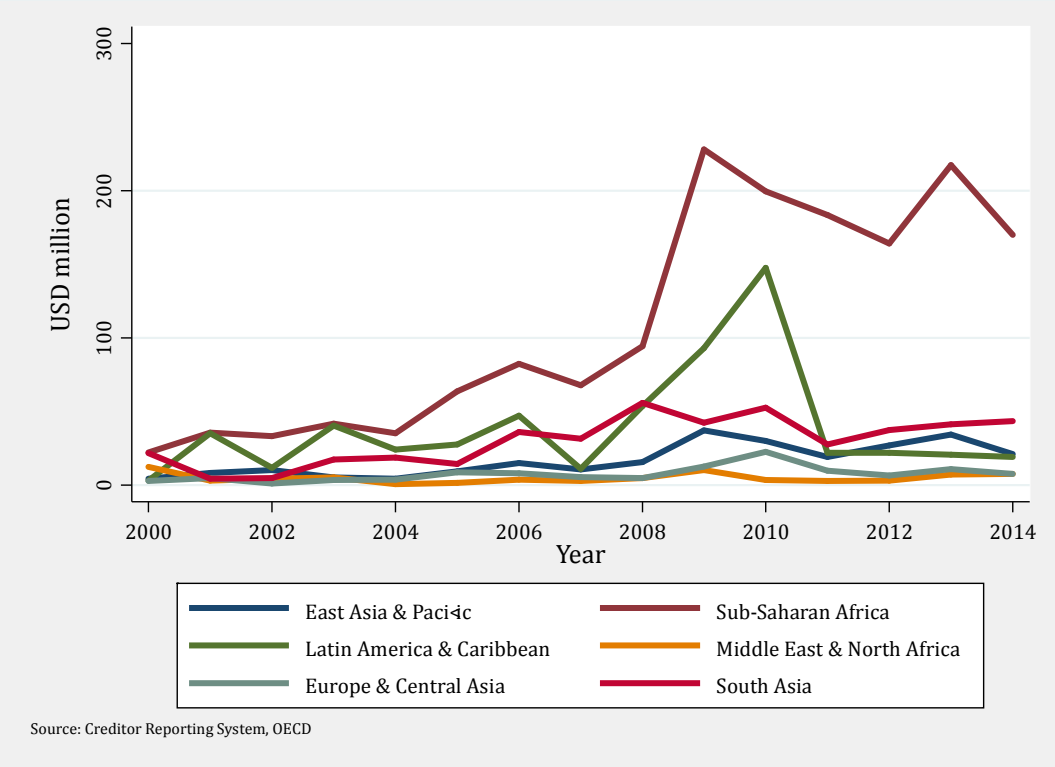

Figure 4: HPSR funding by recipient region, 2000-14

Figure 5 breaks down annual HPSR funding by country income group. Funding for all three country income categories grew similarly through 2005, but from 2006 onwards funding accelerated. LDCs and LMICs both experience relatively large and sustained increases in HPSR funding. UMICs also received increased funding in 2009 and 2010, but then total funding to those countries actually declined from 2010 onwards. The 2009-2010 time period corresponded to the time period of the global economic crises in which the IBRD greatly increased funding to many UMICs.

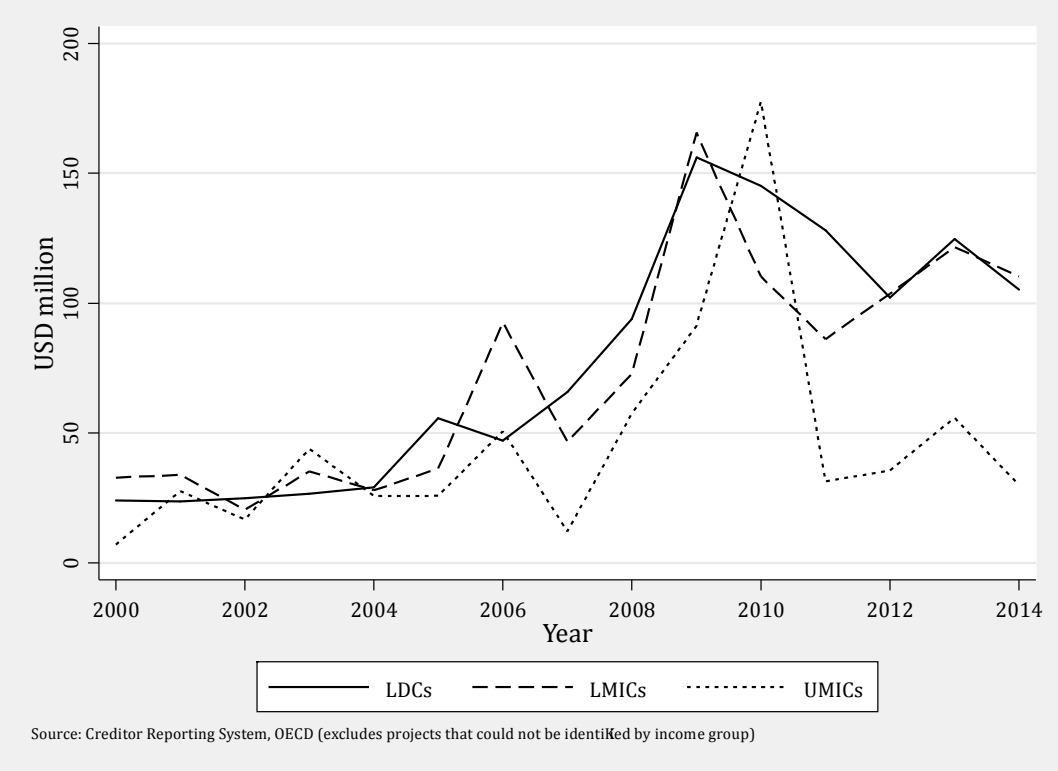

Figure 5: Funding for HPSR by country income group, 2000-14

4. Discussion and Conclusions

Using data on donor financing from the CRS, we tracked donor resources in support of HPSR activities in LMICs from 2000-2014. Using a new methodology that involved searching project-level transactions for HPSR keywords, we found that approximately 21% of all health aid projects over the investigated time period targeted HPSR activities, but only 2% of total aid was spent on HPSR. In total almost $4 billion in 2014 USD were committed by donors to these projects over 15 years (an average of $266 million a year over the whole time period or $433 million a year over the last 5 years). While there have been increases in total funding for HPSR activities since through 2010, HPSR activities have declined as a total share of all health aid activities since that year. The United States, the Global Fund, the BMGF, and the World Bank were the largest donors to HPSR activities over the study time period. However, funding was also highly concentrated among the top 10 donors who provided nearly 93% of all financial support to HPSR activities.

While we believe our methodology improves upon previous efforts to monitor and track resources in support of HPSR activities, we believe that it also has a number of limitations that must be taken into consideration in interpreting our findings. First, we only track funding provided by the traditional global health donors. Not all donor activities are reported, nor do all donors report. However, previous research does suggest that the

majority of financial support for HPSR activities does come from traditional aid donors. We therefore are likely collecting data on the majority of HPSR funding but it is unclear what fraction is represented in our data. Future research efforts could help to clarify this dimension. In addition, as middle-income countries increasingly support HPSR through their domestic resources, it is important that these new funding sources are also reflected in our estimates of HPSR.

Second, using our approach, we can only identify projects that have HPSR activities in the titles or long descriptions and we cannot determine the fraction of the total resources in a project that are actually spent on research activities. Our secondary in-depth analysis of donor documents was designed to try to better account for this. In addition, a small fraction of total projects lack project descriptions all together.

Third, while most projects provide a short description in English, not all documents are reported in English. We were able to translate some of the keywords into French and Spanish and include these in our keyword searches; however, funding from donors who report in other languages may be underreported.

Fourth, we have tracked commitments, a measure which we believe better represents the intent of donors compared to disbursements, but it does lead to some fluctuations in the data year to year, in particular if multiyear grants are announced in a year. Finally, our research method relies heavily on the existence of specific keywords to identify HPSR activities and that all donors would use these terms to report their aid activities. Efforts are needed to standardize terminologies around HPSR, an area where the Alliance could play a convening role bringing together donors and those who maintain aid databases to better understand and harmonize donor-reporting mechanisms.

There is a growing consensus that sufficient and reliable financing, from donors and otherwise, will be required to continue to fund HPSR activities going forward. Our analysis suggests that while overall funding levels for HPSR have grown, they have not always kept pace with all health aid growth, and that funding levels have remained relatively flat since 2010. Overall, funding for HPSR represents only a very small fraction (2%) of all health aid. Given the destruction witnessed in West Africa during the Ebola outbreak, there needs to be a larger evidence base on how to build stronger and more resilient health systems in LMICs. More research is needed and this research will need more funding. Future advocacy efforts should be launched to help mobilize more research for HPSR. Better data on HPSR data is also needed, and the Alliance and other organizations should work with donors and other funders to help provide more regular and reliable data on HPSR funding activities

Appendix 1: List of Donors in the CRS database

Bilateral donors	Multilateral donors	Private donors
1 Algeria	1 AfDB	1 Bill & Melinda Gates Foundation
2 Australia	2 AfDF	
3 Austria	3 Arab Fund (AFESD)	
4 Belgium	4 AsDB	
5 Bulgaria	5 AsDB Special Funds	
6 Canada	6 BADEA	
7 Chinese Taipei	7 CarDB	
8 Croatia	8 Climate Investment Fund	
9 Cyprus	9 EBRD	
10 Czech Republic	10 GAVI	
11 Denmark	11 GEF	
12 Estonia	12 Global Fund	
13 EU Institutions	13 Global Green Growth Institute	
14 Finland	14 IAEA	
15 France	15 IBRD	
16 Germany	16 IDA	
17 Greece	17 IDB	
18 Hungary	18 IDB Sp.Fund	
19 Iceland	19 IFAD	
20 Iraq	20 IFC	
21 Ireland	21 IMF	
22 Israel	22 IMF (Concessional Trust Funds)	
23 Italy	23 Isl.Dev Bank	
24 Japan	24 Montreal Protocol	
25 Kazakhstan	25 Nordic Dev.Fund	
26 Korea	26 OFID	
27 Kuwait (KFAED)	27 OSCE	
28 Latvia	28 UN Agencies	
29 Libya	29 UNAIDS	
30 Liechtenstein	30 UNDP	
31 Lithuania	31 UNECE	
32 Luxembourg	32 UNEP	
33 Malta	33 UNFPA	
34 Netherlands	34 UNHCR	
35 New Zealand	35 UNICEF	
36 Norway	36 UNPBF	
37 Poland	37 UNRWA	
38 Portugal	38 UNTA	
39 Qatar	39 WFP	
40 Romania	40 WHO	
41 Russia		
42 Saudi Arabia		
43 Slovak Republic		
44 Slovenia		
45 Spain		
46 Sweden		
47 Switzerland		
48 Thailand		
49 Turkey		
50 United Arab Emirates		
51 United Kingdom		
52 United States		

Note: AfDB=African Development Bank, AfDF=African Development Fund, AsDB=Asian Development Bank, BADEA=Arab Bank for Economic Development in Africa, EBRD=European Bank for Reconstruction and Development, GAVI=The Vaccine Alliance, GEF=Global Environment Facility, IBRD=International Bank for Reconstruction and Development, IDA=International Development Association, IDB=Inter-American Development Bank, IFAD=International Fund for Agricultural Development, OFID=OPEC Fund for International Development, UNAIDS=The Joint Programme on HIV/AIDS, UNDP=United Nations Development Program, UNECE=United Nations Economic Commission for Europe, UNFPA=United Nations Population Fund, UNICEF=United Nations Children's Fund, UNPBF=United Nations Peace Building Fund, UNRWA=United Nations Relief and Works Agency, WFP=United Nations World Food Programme, WHO=World Health Organization.

Appendix Table 2: Total Donor Commitments by CRS Sector and Subsector

DAC Code	CRS Code	Description	Clarifications / Additional notes on coverage	Total Commitments 2006-2013 (US Millions)		
121		**HEALTH, GENERAL**		**All Health**	**HPHS**	**HPSR**
	12110	Health policy and administrative management	Health sector policy, planning and programmes; aid to health ministries, public health administration; institution capacity building and advice; medical insurance programmes; unspecified health activities.	19,916.4	5,401.9	424.3
	12181	Medical education/training	Medical education and training for tertiary level services.	915.8	194.1	29.0
	12182	Medical research	General medical research (excluding basic health research).	2,270.3	269.6	87.2
	12191	Medical services	Laboratories, specialised clinics and hospitals (including equipment and supplies); ambulances; dental services; mental health care; medical rehabilitation; control of non-infectious diseases; drug and substance abuse control [excluding narcotics traffic control (16063)].	4,793.3	876.0	27.9
122		**BASIC HEALTH**				
	12220	Basic health care	Basic and primary health care programmes; paramedical and nursing care programmes; supply of drugs, medicines and vaccines related to basic health care.	21,079.2	3,989.1	242.7
	12230	Basic health infrastructure	District-level hospitals, clinics and dispensaries and related medical equipment; excluding specialised hospitals and clinics (12191).	4,631.3	1,035.6	18.4
	12240	Basic nutrition	Direct feeding programmes (maternal feeding, breastfeeding and weaning foods, child feeding, school feeding); determination of micro-nutrient deficiencies; provision of vitamin A, iodine, iron etc.; monitoring of nutritional status; nutrition and food hygiene education; household food security.	4,264.0	589.8	42.8
	12250	Infectious disease control	Immunisation; prevention and control of infectious and parasite diseases, except malaria (12262), tuberculosis (12263), HIV/AIDS and other STDs (13040). It includes diarrheal diseases, vector-borne diseases (e.g. river blindness and guinea worm), viral diseases, mycosis, helminthiasis, zoonosis, diseases by other bacteria and viruses, pediculosis, etc.	14,636.4	2,355.6	150.4
	12261	Health education	Information, education and training of the population for improving health knowledge and practices; public health and awareness campaigns; promotion of improved personal hygiene practices, including use of sanitation facilities and handwashing with soap.	740.7	106.1	8.7
	12262	Malaria control	Prevention and control of malaria.	12,183.1	2,218.8	598.8
	12263	Tuberculosis control	Immunisation, prevention and control of tuberculosis.	6,504.1	1,689.7	89.2
	12281	Health personnel development	Training of health staff for basic health care services.	840.3	166.9	36.7
130		**POPULATION POLICIES/PROGRAMMES AND REPRODUCTIVE HEALTH**				
	13010	Population policy and administrative management	Population/development policies; census work, vital registration; migration data; demographic research/analysis; reproductive health research; unspecified population activities.	3,080.0	289.3	40.3
	13020	Reproductive health care	Promotion of reproductive health; prenatal and postnatal care including delivery; prevention and treatment of infertility; prevention and management of consequences of abortion; safe motherhood activities.	11,750.7	4,470.8	579.9
	13030	Family planning	Family planning services including counselling; information, education and communication (IEC) activities; delivery of contraceptives; capacity building and training.	4,862.1	2,421.4	51.8
	13040	STD control including HIV/AIDS	All activities related to sexually transmitted diseases and HIV/AIDS control e.g. information, education and communication; testing; prevention; treatment, care.	56,727.8	5,528.6	1,428.6
	13081	Personnel development for population and reproductive health	Education and training of health staff for population and reproductive health care services.	352.2	61.2	12.8
	16064	Social mitigation of HIV/AIDS	Special programmes to address the consequences of HIV/AIDS, e.g. social, legal and economic assistance to people living with HIV/AIDS including food security and employment; support to vulnerable groups and children orphaned by HIV/AIDS; human rights of HIV/AIDS affected people.	1,359.8	134.3	15.3
			Total	**170,907**	**31,799**	**3,885**

Appendix 3: Terms for Keyword Search

+Health+Policy+and+Health+Systems+			HPSR	+Flag+Words+
1 access	**55** healthcare)system	**110** public)hospital	**1** action)research	**1** immigration
2 advancing)access	**56** hospital	**111** public)sector	**2** analysis	**2** development)policy
3 affordability	**57** hospital)care	**112** public)spending	**3** assess	**3** poverty)reduction
4 budget)support	**58** hospital)management	**113** quality	**4** audit	**4** nutrition
5 capacity)building	**59** human)resource	**114** quality)improvement	**5** case)studies	**5** sanitation
6 clinic	**60** human)resources)for)health	**115** reform	**6** case)study	
7 cost)effective	**61** immunization	**116** reform)process	**7** causal	
8 costs	**62** impact	**117** report	**8** cost)effective	
9 data	**63** implementation	**118** sector)reform	**9** costs	
10 decision)maker	**64** influence	**119** service)delivery	**10** data	
11 decision)making	**65** information	**120** social)capital	**11** data)collection	
12 delivery	**66** information)system	**121** social)determinants	**12** economic	
13 doctor	**67** infrastructure	**122** social)determinants)of)health	**13** effectiveness	
14 drug	**68** insurance)scheme	**123** social)network	**14** equity	
15 economic	**69** intellectual)property	**124** social)science	**15** evaluate	
16 effective	**70** knowledge	**125** social)scientist	**16** evaluation	
17 equitable	**71** leadership	**126** socio)economic	**17** evidence	
18 equity	**72** medical)care	**127** staff	**18** focus)group	
19 essential)medicines	**73** medical)centre	**128** statistics	**19** group)discussion	
20 financial)incentive	**74** medical)education	**129** strengthen)health)systems	**20** health)research	
21 financial)incentives	**75** medicine	**130** strengthening)health)systems	**21** health)systems)approach	
22 financial)sustainability	**76** national)health)insurance	**131** system)performance	**22** health)systems)interventions	
23 financing	**77** network	**132** system)strengthening	**23** impact	
24 guideline	**78** network)development	**133** systems	**24** influence	
25 guidelines	**79** nurses	**134** systems)approach	**25** intervention	
26 health)care	**80** p4p	**135** systems)intervention	**26** interview	
27 health)centre	**81** performance	**136** systems)perspective	**27** investigate	
28 health)coverage	**82** personnel	**137** systems)research	**28** method	
29 health)equity	**83** pharmaceutical	**138** systems)strengthening	**29** mixed)method	
30 health)facilities	**84** policies	**139** systems)thinking	**30** performance	
31 health)financing	**85** policy	**140** theory	**31** policy)analysis	
32 health)information	**86** policy)analysis	**141** training	**32** policy)intervention	
33 health)information)system	**87** policy)change	**142** trust	**33** process	
34 health)insurance	**88** policy)development	**143** uhc	**34** process)evaluation	
35 health)market	**89** policy)implementation	**144** universal)health	**35** qualitative	
36 health)organisation	**90** policy)intervention	**145** universal)health)coverage	**36** qualitative)research	
37 health)planning	**91** policy)maker	**146** vaccine	**37** question	
38 health)planning)and)management	**92** policy)process		**38** report	
39 health)policies	**93** policymaker		**39** research	
40 health)policy	**94** political		**40** research)method	
41 health)policy)and)planning	**95** politics		**41** research)question	
42 health)policy)and)systems	**96** primary)care		**42** research)strategy	
43 health)policy)and)systems)research	**97** primary)health		**43** researcher	
44 health)professionals	**98** primary)health)care		**44** respondent	
45 health)project	**99** private)health)sector		**45** social)science	
46 health)reform	**100** private)hospital		**46** statistics	
47 health)sector	**101** private)sector		**47** study	
48 health)sector)reform	**102** process		**48** study)design	
49 health)services	**103** process)evaluation		**49** survey	
50 health)spending	**104** provision		**50** systems)interventions	
51 health)system	**105** provision		**51** systems)research	
52 health)system)strengthening	**106** public)health		**52** systems)thinking	
53 health)worker	**107** public)health)policy		**53** theory	
54 healthcare	**108** public)healthcare		**54** understand	

Appendix 4: Donor Assumptions Methodology

Donor type	Assumptions made
Multilateral Donors	World Bank's project database contains data on IBRD and IDA commitments for each loan. The Bank provides a breakdown of the percentage of project funds allocated to different sectors and themes. We examined individual project documents for the 20 largest IBRD projects (59% of total IBRD commitments) and the 20 largest IDA projects (40% of total IDA commitments) and adjusted project commitments to reflect the percentage of project funds allocated to health systems performance. On average, 26% of IBRD and 24% of IDA project funds were allocated to health systems performance. Based on these averages, we allocated 25% of commitments from multilateral donors to HPHS and 5% to HPSR.
Bilateral Donors	We estimated bilateral commitments to HPHS and HPSR based on information obtained from four agencies (USAID, AusAID, DFID, and CIDA). The funding assumptions applied to USAID are based on estimates of annual funding in target health areas (Malaria, Nutrition, HIV/AIDS, Maternal and Child Health, Service Delivery, Family Planning and Reproductive Health, Tuberculosis, Other Public Health Threats, Health Systems Strengthening, Program Design and Learning, and Administration and Oversight) provided in two USAID Reports to Congress on health-related research and development activities. The reports cover the period 2006-2013. Detailed information on projects funded by CIDA from 1998-2013 are available online through the Government of Canada International Development Project Browser. We reviewed project profiles for the top 20 projects funded by CIDA, which include a breakdown of the percentage of project funds allocated to different sectors and themes and calculated an average percentage allocated to HPHS and HPSR activities. We reviewed annual budget portfolios for DFID and AusAid to calculate the average percentage of health aid allocated to HPHS and HPSR for the years 2006-2012. For DFID, it is important to note that total commitments for HPSR over the period 2006-2010 are substantially lower than disbursements for HPSR—$84 million in commitments compared to $157 million in disbursements—and therefore it is important to take this into consideration when interpreting these estimates. Based on the averages from USAID, AusAID, DFID, and CIDA, we allocated 25% of commitments from bilateral donors to HPHS and 5% to HPSR.
The Global Fund	The grants database made available online by GFATM provides on project summary budgets, which include a breakdown of funding by expenditure category. We reviewed the budgets of the top 31 Global Fund projects (25% of all Global Fund projects) and calculated the average percentage allocated to HPHS and HPSR across projects. We allocated 15% of Global Fund commitments to HPHS and 5% to HPSR.
GAVI	GAVI's transparency portal includes information on Gavi's commitments and disbursements by type of support, country and year for the years 2005-2014. We compared annual commitment amounts for health systems strengthening in the portal to those in CRS database to confirm that projects designated as HPHS were categorized correctly.
Bill and Melinda Gates Foundation	To estimate HPHS and HPSR commitments from the Gates Foundation, we reviewed the descriptions of the largest 4 projects within each CRS subsector (CRS subsectors are described in the chart below) to determine if projects were relevant to HPHS and HPSR. We found that 50% of projects reviewed involved HPHS activities and roughly 25% of projects involved HPSR activities.
UN Agencies	Information on HPSR funding among UNICEF, UNDP, UNFPA proved difficult to obtain. We therefore employed the same method used for the Gates Foundation to estimate HPHS and HPSR commitments. We reviewed the descriptions of the largest 4 projects within each CRS subsector (CRS subsectors are described in the chart below) to determine if projects were relevant to HPHS and HPSR. We allocated 25% of commitments from UN Agencies to HPHS and 5% to HPSR.

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