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Evidence-Based Allocation in Global Health

Lessons Learned for Germany

Anna Minasyan

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Bonn, February 2018 Anna Minasyan

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Abbreviations

AIDS	acquired immune deficiency syndrome
BMZ	Federal Ministry for Economic Cooperation and Development (Germany)
DAC	Development Assistance Committee
DC	Development Cooperation
DEval	German Institute for Development Evaluation / Deutsches Evaluierungsinstitut der Entwicklungszusammenarbeit
EUR	euros
EVIPNet	Evidence-Informed Policy Network
GAVI	Global Alliance for Vaccines and Immunisation
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HIV	human immunodeficiency virus infection
HSS	health systems strengthening
ISS	immunisation service support
ODA	Official Development Assistance
SDG	sustainable development goal
STD	sexually transmitted disease
SURE	Supporting the Use of Research Evidence
TB	tuberculosis
The Fund	The Global Fund to Fight AIDS, Tuberculosis and Malaria
USD	United States dollar
WHO	World Health Organization

Executive summary

This Discussion Paper studies evidence-based allocation of aid in the health sector with the aim of identifying lessons learned for Germany and other (bilateral) donors. It contributes to the identification of evidence-based allocation practices in global health by defining two types of evidence, practical and scientific, where the former relates to discretionary information motivated by practical considerations (such as monitoring and evaluation (M&E) results, statistical indicators, and so on) while the latter stands for state-of-the-art knowledge stemming from rigorous scientific research. Furthermore this study explores what evidence means for multilateral and bilateral donors, and to what extent practical and scientific evidence is used in global health aid allocations. Aid allocation approaches of the Global Alliance for Vaccines and Immunisation (GAVI), The Global Fund to Fight AIDS, Tuberculosis and Malaria (The Global Fund), the World Health Organization (WHO), and the German Federal Ministry for Economic Cooperation and Development (BMZ) are discussed and recommendations for Germany are provided.

The following questions will be addressed:

- What constitutes evidence in the area of health and, consequently, what is evidence-based allocation in health aid?
- What type of evidence is used by multilateral donors in global health (best practice) in general and by Germany as a bilateral health aid donor in particular?
- What are the "pros and cons" of evidence-based allocation of health aid?
- What lessons can be learned in order to improve the effectiveness and transparency of Germany's health aid allocation?

Ultimately, the findings of this study show that practical evidence is commonly used in heath aid, also by Germany as a bilateral donor, while scientific evidence is only used systematically at The Global Fund as well as being part of WHO guidelines on various health policies and disease intervention programmes worldwide. The Global Alliance for Vaccines and Immunisation (GAVI) and The Global Fund also use performance-based aid, which means the allocation of additional funds to those who provide measurable evidence (numbers, figures) on the success of the intervention, for example, in terms of number of lives saved.

Scientific evidence refers to recent know-how on what works and what does not, based on findings from rigorous scientific research. With regard to the hierarchy of evidence, systematic reviews and meta-regression analyses provide the highest level of evidence followed by studies using randomised control trials. Lower levels of scientific evidence include rigorous impact evaluations, peer-reviewed observational studies, as well as systematic case studies and meta-reviews.

The main difference between the two types of evidence is that evidence from rigorous research focuses on the causal effect of a policy/project/programme on an outcome of interest, while practical evidence does not; however both are provided ex ante as a support for a proposal.

This study defines evidence-based allocation as a financing approach that directs funds particularly towards those programmes and interventions that are shown to be effective based on practical or scientific evidence, that is, use of the best practice in the sector.[1]

Although scientific evidence-based aid allocation contributes to transparency, measurability, accountability and cost-effectiveness, its implementation in practice has many barriers, especially at the donor-recipient level due to government-to-government relations which do not exist in the case of a multilateral fund's relationship with a recipient country. Moreover, in contrast to multilateral donors who have a specific long-lasting thematic focus (such as interventions and the prevention of disease), bilateral health aid is provided for broader purposes for which not enough scientific evidence may exist or, alternatively, may be rather difficult to collect due to the specificities of working in a foreign country with limited resources. In addition to the broader focus and the political nature of bilateral health aid, the paradigms of aid – not least within the health sector – may shift from one year to the next based on globally pressing issues or international agreements. In contrast, the focus of most multilateral funds remains constant, which makes it easier to build knowledge and lessons learned as part of evidence-based aid allocation.

Descriptive analysis of German bilateral health aid shows that it complements multilateral health aid in most cases as it focuses on purposes that are not covered by GAVI and The Global Fund, except for HIV/AIDS. However, since 2012, bilateral transfers for HIV/AIDS have shrunk causing Germany to become one of the largest donors to The Global Fund, GAVI, the WHO and EU Institutions that deal with global health issues.

This study recommends the use of scientific evidence-based aid allocation in bilateral health aid (including that of the BMZ), wherever possible, but without "stepping on the toes" of aid-recipient governments. As a start, funding requests should include a section on rigorous scientific evidence for the proposed intervention/project/programme. It is important to note that scientific evidence-based aid allocation does not imply that bilateral donors must generate the scientific evidence themselves but rather that they should make sure the funding proposal includes a section describing the existing state-of-the-art knowledge or, if no relevant evidence is found, an ex ante generation of such knowledge (pilot stage). The scientific evidence can be in the form of systematic literature reviews, WHO guidelines, peer-reviewed articles published in international scientific journals and the like, which provide evidence that the success rate of the proposed project is likely to be higher. In turn, bilateral donors should give preference to those proposals that are supported by the existing scientific evidence. This paper also recommends narrowing down the purposes of bilateral health aid and focusing only on a few issues: Clearly, there is more scientific evidence on disease control and prevention than on strengthening health systems for instance, but by reducing the number of purposes, it would be feasible not only to allocate health aid based on evidence but also to increase knowledge about the lessons learned from previous years.

1 See Janus and Klingebiel (2016) for a discussion of broader definitions of evidence-based aid, including results- and performance-based aid. Results- and performance-based aid are not covered in this study.

1 Introduction

In recent years, use of evidence has gained much attention in the donor community. The Paris Declaration on Aid Effectiveness and the Accra Agenda for action (DAC [Development Assistance Committee], 2008) as well as the 2030 Agenda for Sustainable Development (UN General Assembly, 2015) actively promote measurable results, learning processes, mutual coordination and accountability in aid allocation. As a result, donors are expected to demonstrate effective use of public funds, which implies, among others, use of innovative aid allocation tools, such as a combination of evidence-, results- and performance-based aid (Rudolph, 2017).

The focus of this study is evidence-based aid, which is one of the ways of ensuring transparency, measurable results and accountability in aid allocation decisions. In addition, the example of health aid is chosen for this study because the implementation of scientific evidence-base policymaking has been quite successful in the health sector (Black & Donald, 2001). Currently, evidence-based health policy is implemented in many countries and regions (see resources at Cochrane Collaboration (for example, www.cochrane.de) and the WHO, as well as Higgins and Green, 2006) but it is not yet a common practice in health aid allocation.

Meanwhile, over the last decade, global bilateral and multilateral aid in the health sector has increased from the sum of USD 21 billion from 2007 to 2009 to about USD 29 billion from 2013 to 2015[2] (OECD [Organisation for Economic Co-operation and Development], 2015b). In 2013, Germany adopted a new strategy for taking responsibility and shaping the global health agenda (BMZ [Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung], 2013). Consequently, in recent years, the average share of health aid in total German Official Development Assistance (ODA) doubled from 3 per cent in 2010 to almost 6 per cent in 2015.[3] Moreover, as a signal towards the importance of Germany's role in shaping the global health agenda, German Chancellor Angela Merkel quite clearly stated that it was her government's priority to ensure that rights to receive sound health support become part of the sustainable development goals (SDGs). In her address to the Sixty-eighth World Health Assembly in May 2015, she stated: "We are all working to ensure that the right to health is firmly anchored in the United Nations system as one of the new Sustainable Development Goals" (WHO, 2015).

Thus, this study specifically looks at the case of Germany as a bilateral donor because health financing has gained much importance in German Development Cooperation (DC); however, compared to other sectors, the share of health financing in German DC as a whole is less than 6 per cent. This means that more funds can be potentially attracted into this sector with an adoption of innovative allocation strategies.

In general, Germany – like many other bilateral donors – channels its aid to health both bilaterally, transferring funds directly to recipient governments, and multilaterally, transferring funds to multilateral aid organisations such as GAVI, the WHO, IDA, The

2 In constant 2014 prices.

3 The United States provides the largest share of global health aid, and in general, the United States is the largest donor in absolute terms of Official Development Assistance.

Global Fund, and European institutions, which then implement health programmes in eligible countries. For example, between 2012 and 2013, the Global Fund and the European institutions were the biggest recipients of Germany's multilateral health aid (OECD, 2015b). However, decisions on allocation of German aid to recipient governments (bilateral) and multilateral organisations (multilateral) are not made publicly available which hampers the transparency and accountability of the process. The allocation of German aid depends on various factors, which are based not only on recipients' needs but also on Germany's and recipients' interests as well as lobbying efforts and competition among multilateral organisations. Nevertheless, since health aid is meant to ensure the basic survival of populations, it is essential that the funds directed towards improving health in developing countries are also supported by evidence of their effectiveness, when feasible.

Hence, the purpose of this study is to explore to what extent the health aid allocation by Germany, as a bilateral donor, follows an evidence-based approach, and how the relevant practices by multilateral donors can shed light on the adaptability of such approaches to the government-to-government context. In this paper a desk-study was augmented by expert interviews conducted with relevant representatives at the German Federal Ministry for Economic Cooperation and Development (BMZ), The Global Fund, and the Global Alliance for Vaccines and Immunisation.[4] As part of the desk-study, the next section discusses and defines two types of evidence – practical and scientific – as well as providing a working definition for the evidence-based allocation of aid. Section 3 discusses evidence-based aid allocation approaches undertaken by multilateral donors. Section 4 describes German health aid and its allocation mechanisms while Section 5 discusses the feasibility of incorporating the knowledge from scientific evidence into Germany's bilateral health aid allocation. The final section provides a number of recommendations.

4 The interviews were conducted with the representatives of the Health, Social Security and Population Policy Unit and Regional/Country Unit of the German Federal Ministry for Economic Cooperation and Development (BMZ), the Global Alliance for Vaccines and Immunisation (GAVI) Evaluation Team, and The Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund)/Sustainable Development Solutions Networks, with the purpose of identifying the role of scientific evidence in funding decisions at these institutions. The interviewees had a choice between a written or a verbal interview and, in the case of a verbal interview, the choice could be made between Skype or by telephone or in person within Germany. Due to organisational limitations on both sides it was only possible to conduct in-person interviews with members of the BMZ Health, Social Security and Population Policy Unit. The interviews with GAVI and The Global Fund were conducted via Skype and took about 30 minutes, while the interview with the BMZ Regional/Country Unit representative was conducted via phone. The interview with the BMZ Health, Social Security and Population Policy Unit that was conducted in person involved two representatives from the unit (interviewees) and two representatives from the German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE) (as part of interviewer team) and took about one hour. The main questions discussed during the interviews were: "What is evidence for your organisation?"; "How are decisions on financing made at your organisation?"; "Does your organisation follow an evidence-based allocation practice and, if yes, which practices are common?"; "If not, what are the challenges?" The differences in interview mode were due to the timing/schedule and various locations of interviewees. The interviews were based on the principle of confidentiality.

2 Defining evidence and evidence-based allocation in health aid

The Oxford Living Dictionary (2017) defines evidence as "the available body of facts or information indicating whether a belief or proposition is true or valid". For different disciplines and contexts, the types and sources of evidence vary. For example, in law, evidence comes from information drawn from a personal testimony, a document or a material object (Oxford Living Dictionary, 2017). In business management, evidence may come from scientific research as well as practitioners' professional experience, stakeholders' values and concerns, and organisations' internal data (Barends, Rousseau, & Briner, 2014). In the social sciences, evidence may come from statistical and empirical analysis, interviews, individual experiences, and recently also from lab or field experiments (Campbell Collaboration, 2014; Davies & Boruch, 2001; Petrosino, Boruch, Soydan, Duggan, & Sanchez-Meca, 2011). In education, evidence can come from controlled trials (classroom experiments) and a meta-analysis of these experiments (Bernard et al., 2004; Campbell Collaboration, 2014). In health policy, rigorous randomised control trials, systematic reviews and meta-analyses count as the strongest pieces of evidence (Higgins & Green, 2006).

Consequently, evidence is perceived differently among practitioners and researchers across different fields. For development practitioners, "evidence" might mean the results from own monitoring and evaluation studies and/or certain indicators such as maternal mortality ratio; number of people below the poverty line; HIV prevalence; equality in access to health facilities; and so on. On the other hand, in a large share of scientific publications on evidence-based policymaking (such as Banerjee, Cole, Duflo, & Linden, 2005; EU [European Union], 2015; Eyben, 2015; Feeny & McGillivray, 2008; Guillaumont, 2008; Guillaumont, McGillivray, & Pham, 2017; IDS [UK Institute of Development Studies], 2013; Jones, 2012), randomised controlled trials and experiments are referred as the "gold standard" for evidence.

Eyben (2015) provides a working definition for evidence as a set of predetermined, measurable and concrete outcomes. She defines the following types of evidence that also have a hierarchic order to signal quality: randomised control trials (RCTs); local economy-wide impact evaluations (LEWIE); systematic reviews; cost-effectiveness analyses; social return on investment; case studies; and impact evaluation.

De Geoffroy, Léon and Beuret (2015) explore the use of evidence in humanitarian aid allocation and define it as information that supports a specific proposal in order to make a decision: in contrast to opinions and experiences, it should be defendable with facts. Expert knowledge and individual experience are disregarded as evidence. The authors establish a hierarchy of evidence similar to that supported by Cochrane Collaboration, where systematic reviews and meta-analyses are regarded as the highest quality of evidence, while evaluations and audits are seen as the lowest quality of evidence.

Prinja (2010) studies the role of ideas and ideologies in health policy and defines evidence as information generated from research and knowledge as well as from consultations and publications such as policy briefs and reports. She states that evidence can come from "expert knowledge" or can emerge from economic analysis and political information on current government priorities.

Hence, as we can see, no consensus exists across disciplines and within health policy as to what actually constitutes evidence. The definition of evidence may depend on the context –

structure, goals, values and purpose of an institution – and on the methods available through which to generate evidence. For example, while randomised experiments may help one to identify which interventions work, and where, it may not always be reasonable to run randomised experiments when the goal is finding out *why* certain interventions or policies work in one setting but not in another. Also, depending on a problem, one method might be preferable over another. For instance, if a health intervention in a developing country breaches certain ethical considerations then it might be better to rely on several individual experiences (observations), interviews, case studies, or observational studies to support a specific proposal.[5] In addition, Brandt et al. (2009) stresses that the use of current best evidence (such as clinical expertise and systematic research) should be integrated with a "patient's" unique values and circumstances. At the macro level, this might require best evidence to be combined with a partner country's values, history and circumstances, a concern especially relevant in government-to-government (bilateral) aid.

Due to the various perceptions and definitions of evidence in research and practice, this study defines two types of evidence: *practical evidence* and *scientific evidence*. The former is defined as any discretionary (and hence biased) information stemming from practice that is provided to support the decision-making process. The latter is the know-how that stems from state-of-the-art scientific research and its methods which is provided to support decision-making on what works and what does not. A clear distinction between the two is that evidence from scientific research and its methods strives to establish the causal impact of an intervention on an outcome, preferably by using randomised or quasi-randomised laboratory, field or natural experiments or meta-analyses and systematic reviews of (semi-) causal studies. What is common between the two types of evidence defined here is that neither of them is primarily based on one individual's belief on what works as in both case supporting evidence or facts are provided.

One might argue that there is an overlap between the practical and scientific evidence as defined in this study since rigorous research methods can also be used in practice when donors or implementing organisations collaborate with researchers or research institutes to identify what works. According to the definitions elaborated here, if the evidence is generated ex ante using rigorous research methods then it is considered as scientifically independent of the institution generating the evidence. On the other hand, when an organisation hires academics to conduct an evaluation without using any of the methods for establishing causal relationship, it is defined in this paper as practical evidence. Hence, the main difference between practical and scientific evidence is that scientific evidence aims at showing that an intervention (policy/project/programme) has a *causal* effect on the outcome. The quality of scientific evidence is then assessed by how well this causal analysis is carried out.

The best examples of strong scientific evidence in health policy are systematic reviews and meta-regressions analyses of causal studies. These are a standardised and systematic way of reviewing the literature on a specific topic and give an objective and transparent overview of all evidence surrounding the issue.[6] The evidence for a systematic review may come

5 For an extensive critique on the blind promotion of evidence-based policymaking, see Eyben, 2015.

6 The Cochrane Collaboration, an internationally established network of researchers, practitioners and carers. It has been producing and synthesising evidence on health policy in forms of systematic reviews for 20 years now.

from studies that use different methods, samples and data; however the outcome and the "intervention" (the explanatory factor) must be comparable. Systematic reviews and meta-analyses also evaluate the quality of the included studies by using standardised quality criteria. The goal of evidence-based policymaking is to disseminate and communicate the systematically generated scientific evidence on what works to decision-makers and have them pursue these in order to make evidence-based decisions on health issues, be it disease, health systems strengthening, building hospitals, or health insurance policy (Cairney & Oliver, 2017). In addition, rigorous impact evaluations and observational studies also count as scientific evidence, along with systematic case studies and meta-reviews. However, not all research-based evidence is of the same quality; a definite hierarchy of evidence exists. Accordingly, systematic reviews and meta-analyses weight the studies by quality of causal relationship: the weaker the quality of the evidence, the weaker the policy recommendation.

Examples of practical evidence include monitoring and evaluation (M&E) results; indices and indicators signalling need (such as formulae-based aid); measurable performance criteria, as in performance-based aid; and achievements of pre-defined results as in results-based aid. In addition, cost-benefit analyses; value-for-money; qualitative evidence based on interviews and the experiences of multiple individuals also count as practical evidence. Also, policy-based information such as global resolutions and initiatives for a cause, as well as an organisation's values and principles are also regarded as practical evidence. These types of practical evidence are used by bilateral and multilateral donors, implementing agencies and non-governmental organisations (NGOs) where one type of practical evidence might outweigh another type, depending on the donor organisation or government (as in the results-based aid of the UK Department for International Development (DFID), and the discretionary aid of German DC). Empirical analyses show that, for bilateral donors, the most important indicator for their aid allocation decisions is the income level of the recipient country (Nunnenkamp & Öhler, 2011).

Below is a list of various types of practical evidence. These types of evidence usually do not aim to provide causal relationship between an intervention and an outcome:

- Indicators and statistics, international resolutions
- Internal monitoring and evaluation results (M&E, results matrices)
- Audits, cost-effectiveness analysis/value for money
- Institutions' values, principles, goals and objectives
- Lessons learned – non-systematic reviews of success and failures.

The next list provides examples of scientific evidence in the hierarchical order, where "i" denotes the highest quality of evidence and the "iv" the lowest quality of scientific evidence in coherence with principles of Cochrane Collaboration.

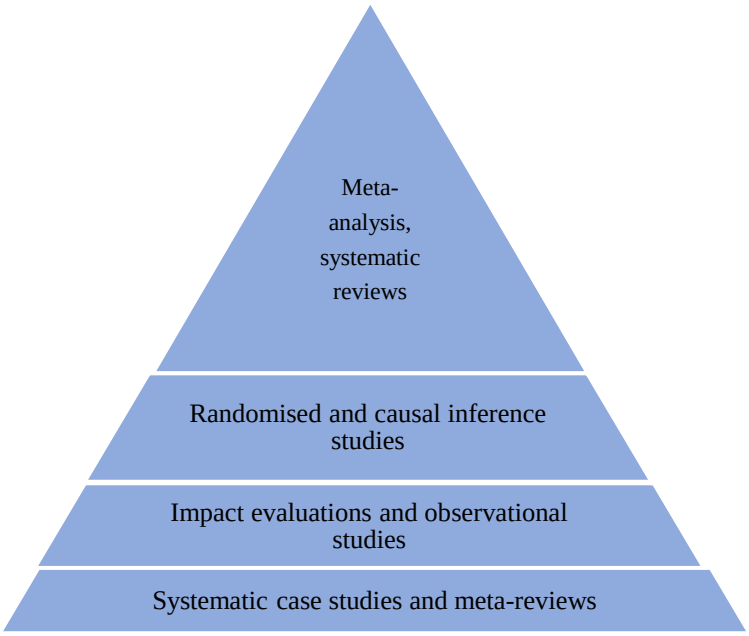
i) Systematic reviews and meta-regression analysis

ii) Randomised and causal inference studies

iii) Rigorous impact evaluations and observational studies based on (quasi-)causal methods

iv) Systematic case studies and meta-reviews.

Figure 1: Hierarchy of scientific evidence in health aid



Note: The pyramid illustrates the relative strength (quality) of each type of evidence: Meta-analysis and systematic reviews arguably provide the most robust evidence (Level 1) while case studies and meta-reviews are the least robust (Level 4).

Source: Author.

While the quality of practical evidence can be subject to an institution's own discretion, the quality of scientific evidence can be standardised using common grounds, especially in the health sector. The pyramid drawn in Figure 1 offers a hierarchy of scientific evidence that can be used in health aid. Meta-analysis and systematic reviews are at the top of the hierarchy (Level 1) as they are considered as mirroring all available evidence and hence can provide the strongest justification for policymaking. The second in the hierarchy are randomised experiments (Level 2). Rigorous impact evaluations and observational studies (Level 3) are regarded as providing stronger evidence than case studies and meta-reviews, which form in the lowest level of scientific evidence (Level 4).

Although expert opinion and beliefs are neither included in practical nor in scientific evidence, they may matter when evaluating the quality of evidence. In the case of meta-analysis and systematic reviews, inclusion criteria and the screening of studies is carried out by two independent researchers who ought to be experts in the field. Since the processes are standardised and evaluated independently, the influence of the knowledge of a single expert is minimised. Where randomised and causal inference studies are concerned, not all of them are of the same quality and power; thus expert knowledge may be used to assess the quality of evidence, if no systematic review is available. In terms of practical evidence, expert opinion also plays a role in deciding what indicators and criteria should be regarded as evidence and how reliable they are. It is possible that – for some countries and projects – a certain indicator is more reliable than others or that certain programmes were more successful than others based on the causal identification analysis. For this reason, experts are constantly involved in assessing the quality of evidence provided. At times, experts can also decide what should be regarded as evidence and how it should be measured, and this is one of the reasons why evidence-based financing is often criticised (Eyben, 2015).

Similar to the lack of an overarching definition of what constitutes evidence, evidence-based policymaking has also not been defined explicitly (Sanderson, 2002). In the United Kingdom, it was initially implemented at a government level in order to modernise public policy and public administration under the mantra "what matters is what works" (Sanderson, 2002). It was aimed at being responsive to the needs of people in order to deliver "efficient", "effective" service with "high quality standards" (Sanderson, 2002). One of the few definitions for evidence-based policy is provided by Plewis (2000, p. 96), who states that these are "policy initiatives that are to be supported by research evidence and [that] policies introduced on the trial basis are to be evaluated in as rigorous a way as possible."

Consequently, in this current paper, evidence-based aid allocation is defined as allocation of aid towards those programmes and interventions that are backed by practical and/or scientific evidence. In terms of practical evidence, it could be a question of cost-benefit analysis or monitoring and evaluation results from similar programmes in previous years and other locations which show the effectiveness of proposed programmes. In terms of scientific evidence, the effectiveness of programmes and interventions require to be supported by current scientific research and best practice. For example, if current scientific evidence on HIV prevention includes harm reduction programmes as the most effective way of reducing HIV prevalence, then harm reduction should be part of the funding request.

In practice, the allocation of aid in the case of bilateral donors and most multilateral donors is supported by practical evidence. Moreover, a bilateral donor might make use of various mechanisms at the same time when allocating its aid, such as policy-based aid (for instance, a G7 summit resolution to ensure universal health coverage), formulae-based aid (allocating, for example, only to those countries with less than USD 1,500 per capita annual income) and performance-based aid (such as increasing the financing when pre-agreed results have been achieved in the base year).

By contrast, policymaking based on scientific evidence is relatively new in development cooperation although has been used in medicine and in the British health sector since 1990s (Brandt, 2009) with a goal to inform and support policymakers. In recent years, efforts have been made to include evidence-based practices in development cooperation globally. In health, it is now used not only in disease intervention but also in health insurance, health services and infrastructure, among others. In addition, there have been initiatives to use evidence-based policymaking beyond the realm of health, such as in education and governance. In particular, two global initiatives promoting the integration of scientific evidence into both practice and policymaking now exist: the Cochrane Collaboration, focused on health, and the Campbell Collaboration that also extends its focus to other sectors.[7]

The next section discusses allocation practices in health aid by multilateral organisations, such as the WHO, GAVI and The Global Fund with regard to practical and scientific evidence.

7 The Cochrane Collaboration focuses mainly on health sector while the Campbell Collaboration produces systematic reviews of research evidence on the following topics: Crime and Justice; Disability; Education; International Development; Knowledge Translation and Implementation; Nutrition; and Social Welfare. These are often used by policymakers from the relevant sectors.

3 The evidence base for multilateral funds in global health

This section discusses health aid allocation practices at three multilateral donors in the sphere of health. It assesses whether and how evidence, as defined in this study, is used at these organisations. In particular, the evidence-based initiatives of the World Health Organization (WHO), the Global Alliance for Vaccines and Immunisation (GAVI), and The Global Fund to Fight AIDS, Tuberculosis and Malaria are examined by exploring their literature and the websites of the organisations as well as by conducting interviews with representatives from the organisations, where possible. The aim of this qualitative analysis is to define potential lessons learned for German Development Cooperation in the field of health and beyond.

3.1 The World Health Organization (WHO)

The World Health Organization (WHO) is a specialized UN agency. It was established in 1948 with the goal of helping people across the globe to attain high standards of health. It now has 194 member states and is the global leader in setting norms and standards of health that are effective throughout the world. It is also the leader in the formulation of evidence-based health policy principles and in helping to shape the health research agenda (BMZ, 2013). In particular, one of WHO's core functions is the development of guidelines on the appropriate use of evidence in health policies. Because of this, the initiatives at the WHO directed towards evidence-based health policy are of utmost relevance to this study.

The way evidence is defined at the WHO is closely related to that of evidence-based health policy and scientific evidence as defined in this study. In particularly, the WHO regards systematic reviews and meta-analysis as the best form of evidence and provides guidelines on how to assess the quality of this type of evidence (WHO, 2012). The WHO cooperates closely with the Cochrane Collaboration, the Cochrane EPOC group, the Pregnancy and Childbirth group, the Fertility Regulation group and the GRADE (Grading of Recommendations, Assessment, Development and Evaluations) working group to ensure a rigorous guideline-development process. Guidelines for (scientific) evidence-based policy exist on a number of topics, such as child health, family planning, health systems, malaria, tuberculosis (TB), HIV/AIDS and so on.

In 2005, as a response to a resolution approved by the World Health Assembly, the WHO established an Evidence-Informed Policy Network (EVIPNet) with the purpose of generating and providing research-based evidence for policymaking. In the case of EVIPNet, evidence is defined as knowledge generated from "qualitative studies (including case studies, interview and focus group studies), surveys, or structured processes. Systematic reviews are included, as far as possible" (SURE, 2011, p. 4-6). This implies that the definition used for evidence by EVIPNet is close to the scientific definition used in this study and therefore that it falls under Level 4 in the evidence hierarchy of Figure 1. When systematic reviews are used however, it falls under Level 1 in the hierarchy of evidence.

It is notable that EVIPNet collaborates with Cochrane Collaboration, which is the leading organisation for systematic reviews and the meta-analysis of research studies. Evidence provided by EVIPNet is mostly used at the partner (recipient) level to help make informed policy decisions and interventions such as about combating malaria and HIV/AIDS,

strengthening health systems, combating excess alcohol consumption, child health, and so on (WHO, 2016).

In practice, EVIPNet works by forming country- or regional-level teams composed of policymakers, researchers and members of civil society (for instance, EVIPNet Africa or EVIPNet Europe). These teams cooperate with local decision-makers to identify priority issues for the country or region and come up with solutions using the best available evidence from research – mainly systematic reviews. The interventions are not only related to diseases but also to strengthening health systems, such as improving patients safety for better-quality care (Nabudere et al. 2014), reducing infant mortality in the Central African Republic (Sépou et al., 2011), health coverage and insurance in Cameroon, and so on. The priority areas are defined on the basis of the evidence attained in relation to a certain problem such as the number of people suffering from a certain disease or the percentage of adverse events in health in terms of patient safety. The initiative also makes use of information from those involved or affected by these decisions. EVIPNet has a Global Steering Group at the global level which acts as a catalyst and supporter of the network and helps to coordinate its activities.[8]

At the country-/regional level, EVIPNet produces a number of outputs that can be used in health sector policymaking including annual evidence-based policies on relevant local issues, and rapid synthesis to make research available to policymakers in the shortest possible time. Various countries or country groups can apply to become a member and raise funds.

Furthermore, the collaborative project financed by the European Commission entitled "Supporting the Use of Research Evidence (SURE)" helps EVIPNet Africa in accessing reliable research evidence in order to make informed policy decisions. At the moment, SURE has 38 evidence-based policy briefs. Three online open-access platforms have been established for the purpose, namely: the Health Systems Evidence; the Support Tool; and the Cochrane International Online Library, that aim at assisting policymakers in making (scientific) evidence-based decisions.

In terms of evidence-based allocation of aid, the Twelfth General Programme of Work of the WHO (WHO, 2014) states that "the existence of evidence-based, cost-effective interventions and the potential for using knowledge, science and technology for improving health" is one of the criteria for priority-setting at the WHO (WHO, 2014, p. 26). This implies that WHO supports activities that use scientific evidence and, in this way, ensure "value for money".

3.2 The Global Alliance for Vaccinations and Immunisation (GAVI)

Global Alliance for Vaccines and Immunisation (GAVI) was established in 1999 with a view to increasing immunisation coverage worldwide and reducing global inequalities in access to vaccines. At the allocation stage, GAVI financing is based on a formulae principle: to be eligible for the financing, a country's annual GDP (gross domestic product) per capita

8 http://www.who.int/evidence/resources/what-is-EVIPNet_20160925.pdf?ua=1

must be less than USD 1,500. Thereafter, GAVI decides on future increases in financing on the basis of country efforts or performance, such as the number of births/infants surviving in the previous period (GAVI, 2009a). In order to receive funding from GAVI, eligible countries submit a project proposal describing whether they fulfil the criteria set by GAVI. The criteria are specific to each country but most of them include provision of indicators on child mortality, maternal mortality, immunisation coverage, and such like. In the countries eligible, GAVI additionally offers cash-based support (known as GAVI's Immunisation Service Support (ISS)), which stipulates that continued support for immunisation is conditional on performance and the quality of immunisation coverage data (GAVI, 2009a, 2009b). As of 2005, GAVI has been offering another funding window for eligible countries with regard to health systems strengthening (HSS). GAVI'S HSS financing is allocated according to the following principle: eligible countries (less than gross national income (GNI) USD 1,500 per capita) with more than USD 365 per capita have access to funding equivalent to USD 2.5 per surviving infant per year. Countries with a GNI of less than USD 365 per capita have access to USD 5.0 per surviving infant per year. This way, GAVI allots special consideration to the poorest countries in terms of GNI per capita and number of births. The HSS/cash-based support are indicator-based allocation mechanisms that explicitly allocate larger resources to those most in need (Gandhi, 2015).[9]

In terms of evidence, GAVI regards indicators such as income per capita; child and maternal mortality; increase in the vaccination sustainability; performance in terms of immunisations; and results from own monitoring and evaluation as evidence. Some of the indicators are provided by the applicant country, while monitoring and evaluation are carried out by GAVI or its contractors.

GAVI is fairly transparent in its financing and evaluation, in the sense that all indicators and evaluation results are published online on GAVI's official website (www.gavi.org). A special section devoted to Results and Evidence shows how GAVI measures its progress and how programmes have been evaluated. More than 20 key performance indicators against which GAVI measures programme success are listed on the website.

In terms of scientific evidence as defined in this study, randomised control trials and impact evaluations are carried out whenever they are part of an approved, independent, third-party evaluation proposal. Also, GAVI generates (meta-)reviews and case studies that provide insights for future HSS and ISS grants as stated on the website. For example, the 2010 evaluation of HSS, based on 21 country case studies, including interviews and consultations, aimed at informing the GAVI Board about whether or not to increase the funding available through the HSS window. The evaluation included guiding questions on the performance/effectiveness of design, implementation, monitoring, integration, management and outcomes; areas for further improvement; value added in HSS funding; and lessons learned for the in-depth evaluation impact in the next period. One of the recommendations of this evaluation was the use of mixed methods rather than of only country-wide surveys to better identify the impact of HSS (GAVI, 2009b). According to a GAVI representative, in recent years evaluations at GAVI have mainly been implemented using mixed method-approaches that include literature reviews and data collection along with analysis and interviews.

9 This constitutes performance-based allocation.

Thus one can conclude that GAVI uses various types of evidence – scientific (case studies, meta-reviews) and practical – when making decisions about allocations. However there is no strict rule for using scientific evidence to decide funding allocations, in contrast to The Global Fund which we will deal with next.

3.3 The Global Fund to Fight AIDS, Tuberculosis and Malaria

The Global Fund to Fight AIDS, Tuberculosis and Malaria was established in 2001. The Fund uses the WHO guidelines on scientific-evidence in the health sector as a base for its funding decisions. In addition, The Fund works under the principle of performance-based funding similar to GAVI. Since 2014, The Fund has employed an "allocation-based" model to direct resources to where they are most needed. According to this model, The Fund assesses need based on a formula that gauges the level of disease burden (for example: low, moderate, high, extreme, severe); disease component/s (AIDS/TB/malaria) and economic capacity (income categories defined by the World Bank as low-, middle-, upper-, low-middle, upper-middle income, and so on). Eligible countries are those with a high disease burden and the lowest economic capacity. This model determines the allocation for each eligible country at the beginning of each three-year cycle and represents a shift away from the previous rounds-based system at The Fund, where no ex ante funding was provided. Each three-year period, The Fund publishes a list of eligible countries that may apply for funding.

The funding proposals are assessed by an independent Technical Review Team (as was the case with round-based financing), when country proposals compete with each other. The funding requests must include scientific evidence ("best practice") that supports the proposed programme or intervention. In this sense, The Fund is distinctive among bilateral and multilateral donors in its strict use of scientific evidence when it comes to funding decisions. As stated on The Fund website and confirmed by a Global Fund representative, the Technical Review Panel makes sure that the funding request is adjusted to a country's epidemiological situation and that project proposals are based on scientific evidence. By "scientific evidence", The Fund means the best practice in medicine – mainly findings from peer-review literature, including systematic reviews and meta-analysis not only provided by Cochrane Collaboration but also by the Lancet journal series.

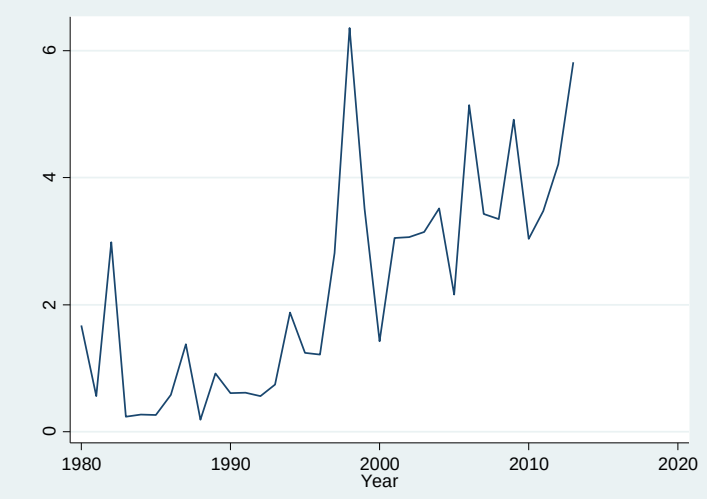
Another important aspect of The Fund (and of GAVI) is its ability to build up knowledge and lessons learned. Due to the fact that The Fund's funding is not earmarked, proposals and funding requests can be directly compared and lessons learned from other projects. In other words, its specific and narrow focus puts The Fund at an advantage in that it can create mechanisms to gain and build up knowledge iteratively, both within and across projects. In addition, the transparency of positive and negative funding decisions also helps the recipients to learn and provide improved proposals for the next round. The Global Fund regards itself as an apolitical and non-bilateral funding organisation because the funding decisions are based on the extent of (scientific) evidence within the proposed programmes and not on any other bilateral or political considerations.

The next section explores the role of evidence in health aid allocation by Germany as a bilateral donor.

4 Evidence-based allocation: German bilateral health aid

Health aid within German Official Development Assistance (ODA) has considerably increased over the last years, as is shown by the rise in bilateral and multilateral funds allocated toward health projects. In particular, the share of health aid within total German ODA increased from 3 per cent in 2010 to almost 6 per cent in 2013 (see Figure 2). In absolute terms, total health aid earmarked by German DC rose from USD 454.1 million (constant 2014) between 2010 and 2012 to USD 746.1 million (constant 2014) between 2013 and 2015 (OECD, 2017).[10] A recent BMZ (2013) Strategy Paper describes that it is Germany's objective to help to shape global health but that it needs to increase its effort to establish its importance in this respect (Munir & Freund, 2016). In terms of bilateral health aid, the contributions of Germany were somewhat less than the DAC average (see Figure 3).[11] In terms of multilateral funds, Germany previously had a policy of giving one-third of its total ODA to multilateral donors and was the largest contributor of multilateral ODA (OECD, 2015a). However, the policy no longer exists and this allows Germany to be more flexible in its allocation decisions. German DC actively cooperates with and contributes to the WHO and other UN organisations that deal with health, as well as with The Global Fund to Fight AIDS, Tuberculosis and Malaria, the Global Alliance for Vaccines and Immunisation (GAVI), and so on (OECD, 2015a).[12] For example, in 2013 Germany was the second largest contributor (after the United States) of health aid to The Global Fund (OECD, 2015b). Moreover, the WHO European Centre for Environment and Health (ECEH) not only has its seat in Bonn, but the German Federal Government also supports it to the sum of approximately EUR 3.4 million annually. Through this engagement, the Federal Government supports the WHO's role in Global Health (BMZ, 2013).

Figure 2: Share of bilateral health aid within German ODA from 1980 to 2013



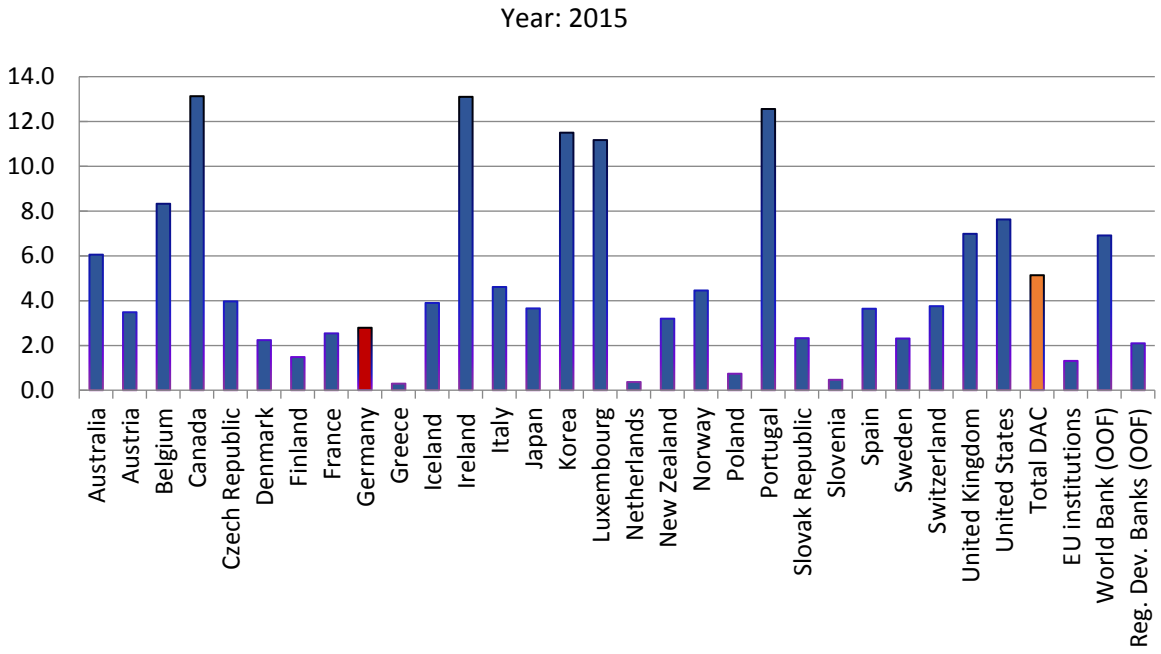
Source: Tierney et al., 2011

10 For example, aid to education in 2015 was about 2.4 times the share of health in Germany's total ODA. The largest share of German ODA goes to social infrastructure (OECD Aid Statistics).

11 The main aid providers in the Health sector remain the United States, GAVI, International Development Assistance (IDA), The Global Fund, and the Bill and Melinda Gates Foundation.

12 For an overview of Germany's health systems strengthening policy, see Munir and Freund (2016).

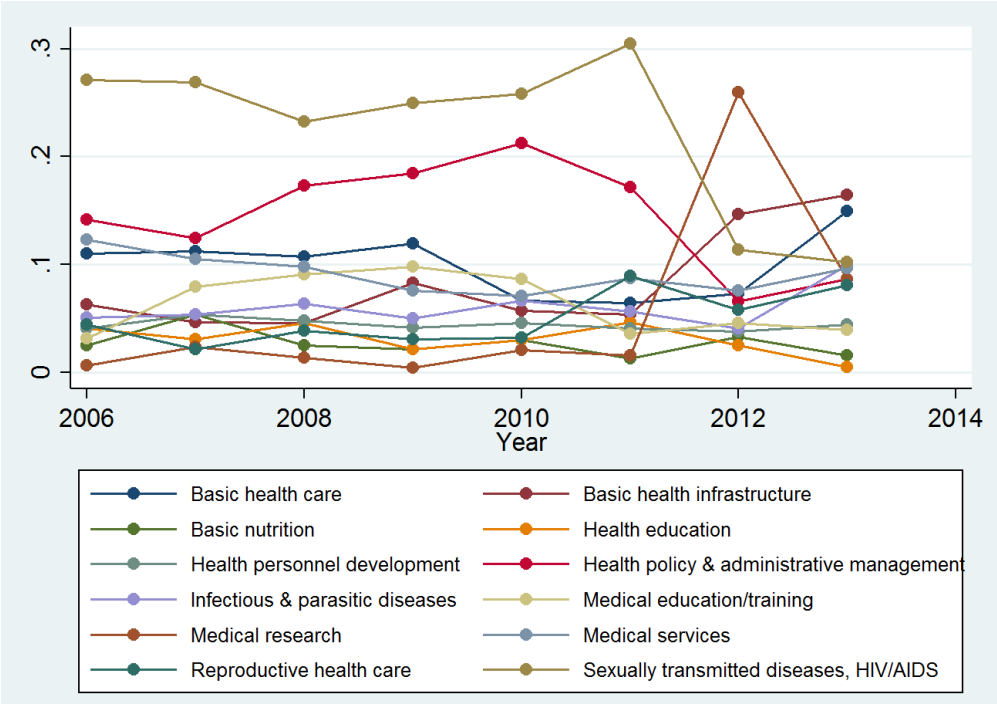
Figure 3: Bi- and multilateral health aid by donor as percentage of total ODA in 2015



Notes: The vertical axis denotes share of health aid as a percentage of ODA in each donor's budget. The horizontal axis denotes bilateral (government-to-government) and multilateral (EU institutions, World Bank, Regional Development Banks) donors. "Total DAC" shows the share of health aid within global ODA. (OOF: "Other Official Flows")

Source: OECD, 2017

Figure 4: German bilateral health aid by purpose over the period 2006-2013



Notes: The vertical axis denotes the shares of German bilateral health aid by purpose in its total bilateral aid. The horizontal axis indicates years. The graph excludes those purposes that comprised less than 1 per cent of bilateral health aid on average during the whole period.

Source: Tierney et al., 2011

As Figure 4 shows, until 2012, the largest share of German bilateral health aid was directed towards a specific disease intervention – sexually transmitted diseases (STDs) and HIV/AIDS – and the second largest share towards health policy and administrative management in aid recipient countries. After 2012, the focus shifted: bilateral aid towards STDs and HIV/AIDS shrank, while funds towards medical research increased (peaking in 2012) together with funds towards basic health infrastructure and basic health care. For the most part, the focus of German health aid thus differs greatly from that of GAVI and The Global Fund: it is broader in scope and covers areas beyond disease interventions.

Over the recent decades – before orienting itself towards SDGs – German development policy within the health sector was shaped by the Millennium Development Goals (UN [United Nations], 2005) on health, and by the Paris Declaration on Aid Effectiveness (BMZ, 2009). The BMZ Sector Strategy Paper of 2009 identifies the following as the main focus areas of German health aid (both multilateral and bilateral): i) infectious diseases such as malaria, HIV/AIDS, tuberculosis; ii) sexual and reproductive health and rights; and iii) health systems strengthening (HSS), using target-group and disease-specific treatments (such as vaccinations). As Figure 4 and OECD reports (2015a, 2015b) show, Germany mostly channels its aid for diseases, such as TB and malaria, and for vaccines and immunisations through multilateral channels. As one can see, these purposes are not recorded as part of Germany's bilateral aid in health; that is, most of the purposes depicted in Figure 4 fall under the broader focus on sexual and reproductive health and rights (personnel development, training, education, services) as well as HSS.

Since the sustainable development goals are relatively new, it is hard to assess Germany's performance on the basis of the health aid it provided in the recent years. Having said that, the latest OECD (Organisation for Economic Co-operation and Development) peer-reviews of German aid offer detailed inspections of its development systems and policies. Among other examination categories, the peer-reviews scrutinise the approach to allocating multilateral and bilateral aid using the following indicator: "The rationale for allocating aid and other resources is clear and evidence-based" (OECD, 2015b). These recent inspections show that Germany's aid allocation decisions are based on context: in other words, they are based on a set of regional quotas and sector/thematic spending that guide country allocation decisions – and, hence, not on (scientific) evidence.

In examining Germany's evaluation system, the Peer Review (OECD, 2015a) notes the importance of the creation of the German Institute for Development Evaluation (DEval, Deutsches Evaluierungsinstitut der Entwicklungszusammenarbeit) in 2012. According to DEval's official website,[13] its aim is to evaluate and measure the development policies of German Development Cooperation by providing scientifically independent studies to improve the quality of evaluation and to ensure that lessons are learned for future cooperation. For example, DEval conducted an evaluation for health systems strengthening in German development policy (see Munir & Worm, 2016) based on literature reviews, evaluations, reviews of HSS internationally, health-related strategic and policy papers as well as analysis of programme proposals. In conclusion, the report highlighted the lack of evidence-based allocations in HSS and cited GAVI as one of the few examples of an institution that evaluates

13 https://www.deval.org/en/about-us.html

HSS (GAVI, 2009b). However, in this particular case the term "evidence-based" seemed to relate to the results of the monitoring and evaluation of GAVI's HSS programme.

German health aid evaluates the need in developing countries based on indicators such maternal mortality, under-five mortality rates, and HIV prevalence. In support of this statement by the BMZ, regression-based analysis show that there is indeed a partial correlation between German aid – particularly health aid – and the child mortality ratio and HIV/AIDS prevalence in the aid-recipient countries (Berthélemy & Tichit, 2004; Nunnenkamp & Öhler, 2011; Stepping, 2012; Thiele, Nunnenkamp, & Dreher, 2007). In addition, the BMZ allocates funding to a certain cause based on international resolutions such as the Muskoka Maternal, Newborn and Child Health initiative, which was announced at the 36th G8 summit (2010) and pledged that all member states would donate a total of an additional USD 5 billion to achieve the Millennium Development Goals (MDGs) as soon as possible. In recent years, however, more attention is being paid at the BMZ to results-based aid for health; examples include results-based financing in Malawi and Burundi, and an impact evaluation project in Nigeria.

The BMZ Unit for Health, Social Security and Population Policy is in charge of the allocation of Germany's multilateral aid, while the Regional/Country Unit is in charge of bilateral health aid in general and multilateral contributions for health funded by BMZ Health. Different multilateral funds have different ways of providing evidence for their funding requests and these may include impact evaluations, rigorous and non-rigorous, input-output assessments, and the like. For example, The Global Fund presents an "investment case" model to the BMZ in terms of "number of lives saved" as evidence for effectiveness. In general, BMZ guidelines for bilateral financial and technical cooperation ask for "proof for economic, socio-economic, socio-cultural, gender and environmental impact" (BMZ, 2008). Such a statement could be made more precise by explicitly asking for, and expecting, the incorporation of scientific evidence in the funding request.

In other words, the BMZ does not systematically require either its multilateral or bilateral partners to present a specific type of (scientific) evidence as a justification for funding and so there is no explicit "scientific evidence base" element in Germany's health aid allocation. Certainly, relevant evaluators and experts at the BMZ are most likely aware of scientific evidence on what works and may well promote a project based on such implicit judgments; however these procedures not only need to be systematically applied but also to be explicitly demanded.

There are several reasons why scientific evidence-based aid allocation is more feasible for multilateral funds than for bilateral donors. First, in contrast to multilateral funds, such as the GAVI and The Global Fund, the spectrum of bilateral health aid is much broader (as shown in Figure 4 for Germany), which implies that a transparent aid allocation mechanism should be developed not only for each sector (such as health) but also for each purpose within a sector. This would require vast amounts of resources and a long-term political commitment. Second, aid allocation literature shows that for bilateral donors geopolitics and trade with recipient countries are important motives in support of bilateral aid allocation in contrast to multilateral funds (Alesina & Dollar, 2000; Dollar & Levin, 2006; Easterly & Williamson, 2011; Roodman, 2006). Third, depending on the demands and ideological predisposition of the citizens of donor countries, more or less transparency can be demanded from their politicians.

Other reasons may include the strict adherence to the Paris Declaration on Aid Effectiveness principles (DAC, 2008), according to which the bilateral donor – namely Germany via the BMZ – is expected to respect "partner ownership" (the "partner" is the recipient government). Yet, financing only programmes and interventions that are backed up by scientific evidence may violate this principle. In addition, the representatives of the BMZ highlighted the fact that the focus of bilateral BMZ health aid was to strengthen the health systems themselves in recipient countries by providing incentives, rather than implementing disease intervention programmes. From the perspective of the BMZ, scientific evidence-based aid allocation could even lead to misplaced incentives, if investments were only made in those projects which were, for example, the cheapest and the least complex (for instance, evidence based on cost-effectiveness, value-for-money, etc.).

In other words, even if they observe German interests, health aid allocation decisions at the BMZ are for the most part based on practical evidence such as SDG indicators, result matrixes, input-output tables, and so on. Recent trends show that the BMZ is also "experimenting" with results-based financing and impact evaluations. DEval, in turn, also implements randomised experiments in the field, literature reviews and desk-studies for the BMZ, which can count as a Level 3- and Level 4-type scientific evidence. Thus, although the BMZ makes use of various different types of practical evidence to support its health aid allocation decisions, scientific evidence is not yet used as one of the factors for allocation of bilateral health aid at that institution.

For this reason the next section discusses the feasibility of scientific evidence-based aid allocation within the health sector by looking at the benefits and barriers associated with it.

5 The feasibility of implementing scientific evidence-based health aid allocation in the case of bilateral donors

Why do multilateral agencies such as GAVI and the Global Fund put a stronger focus on evidence as compared to the BMZ? The reasons range from (geo)politics to project specialisation. As Davis and Howden-Chapman (1996) and Black and Donald (2001) state for the case of United Kingdom, it is difficult to introduce (scientific) evidence-base to governance policies, as these governance policies are driven by "ideology, value judgments, financial stringency, economic theory, political expediency, and intellectual fashion" (Black and Donald, 2001, p. 276). Government-to-government aid to health is a form of a governance policy both from the donor and recipient perspective, hence the challenges pointed out by Davis and Howden-Chapman (1996) and Black and Donald (2001) are also relevant to the case of BMZ.

An obvious difference between bilateral donors and the multilateral funds, such as GAVI and the Global Fund, is that the latter two constitute organisations and not national states, hence their decisions and actions are less likely to be influenced by the (geo)politics and national/strategic interests of donor countries. This difference enables multilateral organisations to act apolitically and to introduce evidence-based approaches at lower transaction (cultural and ideological) costs.

According to the interviewee working for the The Global Fund, if a programme proposal by Country A does not include any supporting scientific evidence for the proposed programme

of action, then it is rejected by The Fund regardless of country A's justification that, say, the scientific evidence is against local traditions of disease treatment. In contrast, it would be "inconceivable" for a bilateral donor to reject the proposal as, according to a representative at the BMZ, bilateral donors ought to accept a recipient country's ownership of programmes. In addition, recipient governments might be reluctant to accept such a policy if it were against the values of its electorate. This latter fact also makes it difficult for bilateral donors to impose scientific, evidence-based allocations in contrast to options available to non-governmental actors such as GAVI and The Global Fund.

Another reason for the ease of implementing evidence-based allocations at such organisations is their specialisation towards certain diseases or preventive methods for which a vast amount of scientific evidence on what works already exists. In contrast, bilateral donors, such as the BMZ, finance policy initiatives that support, for example, strengthening of health systems or improving basic health in developing countries for which scientific evidence is very limited, if not inexistent.

These are likely the most important reasons why allocating aid on the basis of evidence is more feasible for organisations such as GAVI and the Global Fund, rather for than bilateral donors such as the BMZ. Nevertheless, if the will exists, some areas of bilateral aid such as health could prove to be a good starting point for the introducing evidence-based allocation since long-standing experience in the field already exists. Such an allocation mechanism can be used not only for evaluating proposals from partner countries but also those from other multinational organisations and NGOs.

Below is a summary of the important benefits of scientific evidence-based policies based on the discussions in the previous sections as well as the interviews with representatives of The Global Fund, GAVI, and the BMZ. Benefits accrue when such policies are appropriately implemented; however a number of barriers to implementation may exist, as also mentioned below.

Benefits of scientific evidence-based policies

- Funds are directed towards those interventions that are scientifically (causal, quasi-causal relationships) shown to work.
- Such policies ensure transparency, measurability and accountability as well as value for money.
- Such policies provide standardised criteria for all funding requests based on current research evidence.
- Such policies provide the achievement of best possible outcome for the target groups within recipient countries.
- Such policies provide cost-efficiency, as no time is spent on trying out various programmes and measures.
- Such policies provide increased capabilities, lessons learned, and sustainability of health systems in recipient countries.

- Ideology – and politics-free nature ensure that same standards are applied for all cases
- Focus on the people in need and satisfaction of their needs based on the best available evidence from science.

Barriers to scientific evidence-based policies

- There is not enough evidence for each health aid purpose and for each population in aid recipient countries.
- The focus on measurability and "value for money" may lead to misplaced incentives, such as the sabotage of measurable outcomes (similar to the discussions in Grittner (2013) on performance-based aid).
- Standardised criteria based on scientific evidence may lead to similar problems as the earlier donor policy of "one size fits all", which failed due to ignoring the heterogeneity between aid recipient countries in terms of geography, history, capabilities, infrastructure, institutions, and culture.
- The political and bilateral nature of government-to-government transfers and the principle of "partner ownership" limit the role of donor countries in choosing programmes and interventions in aid recipient countries.

Having recognised both the advantages of and barriers to using scientific evidence to support aid allocation decisions in the field of health at the BMZ, a number of recommendations (lessons learned) can be made (see the following section).

6 Recommendations and lessons learned for Germany

In general, the use of scientific evidence in the allocation of health aid in German Development Cooperation would bring several advantages, not only in terms of the implementation of financing what works but also in improving peer-reviews, that is, OECD peer-reviews. However, as mentioned above, there are also barriers against using scientific evidence in health aid allocations. Considering the resources available to the BMZ and the purposes of bilateral health aid by Germany, the following five recommendations are therefore made:

- The Guideline of how to write proposals provided by the BMZ (2008) should explicitly ask that proposals be supported with relevant evidence from rigorous scientific research.
- The BMZ should make it explicit in its Guideline that *preference* is given to those proposals that are supported by relevant scientific evidence and/or follow the relevant WHO guidelines. That is, the entity *requesting* funding should make sure that the proposed intervention or project has been scientifically shown to work while the BMZ should base its allocation decision on this element as one of the funding criteria.
- If no scientific evidence can be presented for a specific health aid domain, it should be stated explicitly and described *where and how* the search for scientific evidence was

carried out along with possible reliable resources and databases making reference to WHO guidelines, the Cochrane Collaboration, the Lancet Series, PubMed, EVIPnet, and so on.

- The introduction of a scientific, evidence-based allocation mechanism should be accompanied by the training of staff (capacity-building) on the relevant state-of-the-art evidence. This would enable staff to evaluate the effectiveness of proposals based on the type of evidence provided.

- Last but not least, it is also essential to develop an evidence-oriented working culture and way of thinking among the decision-makers and proposal evaluators at the BMZ. This would include the internalisation of the values and principles of evidence-based allocation approaches at the individual level and the recognition of scientific evidence as a predictor of a programme's likelihood of success or failure.

Specific examples

- In terms of SDG goals on reducing child and maternal mortality rates, the BMZ should request that proposals include the latest scientific evidence on effective ways to improve child and maternal health in developing countries. Proposals that include such evidence or aim at following WHO guidelines on child health (http://www.who.int/publications/guidelines/child_health/en/) should then be financed.

- In two areas of bilateral health aid that relate to disease interventions – STDs and HIV/AIDS; and Infectious and Parasitic Disease – funds can be allocated towards programmes/interventions that are supported by current research evidence on these topics. It might be helpful to exchange experience with The Global Fund on aid allocation based on scientific evidence for HIV/AIDS and beyond (Sachs & Schmidt-Traub, 2017).

- In terms of bilateral health aid for basic health care and infrastructure purposes, as shown in Figure 4, funds could be allocated to those project proposals that follow or implement WHO guidelines on patient safety and health systems (http://www.who.int/publications/guidelines/en/).

- If possible, the focus should be narrowed down to a few large purposes, at least for a certain period of time, and should base aid allocations for these specific purposes on scientific evidence. That is, preference should be given to financing those projects or interventions within each purpose that have been shown to work by current research evidence or which follow WHO guidelines.

- DEval should be asked to develop independent and peer-reviewed evaluation teams of public health professionals and academics in order to assess project proposals based on the practical and scientific evidence and in adherence with WHO guidelines. The financing of these proposals should be rendered transparent while project proposals that have received funding should be published on the BMZ website Healthy DEvelopments (http://health.bmz.de/) and possibly also on the website of the International Aid Transparency Initiative (IATI).

The WHO website mentioned above (http://www.who.int/publications/guidelines/en/) includes several guidelines on health interventions on the following topics. These are based on scientific evidence approved recently and are published online:

- Child health
- Chronic diseases, injuries and disability
- Communicable diseases
- Environmental health
- HIV/AIDS
- Health systems
- Malaria
- Maternal, reproductive health and women's health
- Mental health and substance abuse
- Nutrition
- Patient safety
- Tuberculosis.

If the BMZ were to evaluate and finance funding proposals based on the extent to which they adhere to WHO guidelines within these topics, this would imply that German aid allocation for health purposes was based on scientific evidence as the WHO guidelines already follow that principle.

References

Alesina, A., & Dollar, D. (2000). Who gives foreign aid to whom and why? *Journal of Economic Growth, 5*(1), 33-63.

Banerjee, A., Cole, S., Duflo, E., & Linden, L. (2005). *Remedying education: Evidence from two randomized experiments in India* (NBER Working Paper 11904). Cambridge, MA: National Bureau of Economic Research (NBER). Retrieved from http://www.nber.org/papers/w11904.pdf

Barends, E., Rousseau, D. M., & Briner, R. B. (2014). *Evidence-based management: The basic principles.* Amsterdam: Center for Evidence-Based Management (CEBMa).

Bernard, R. M., Abrami, P. C., Lou, Y., Borokhovski, E., Wade, A., Wozney, L., ...Huang, B. (2004). How does distance education compare with classroom instruction? A meta-analysis of the empirical literature. *Review of educational research*, *74*(3), 379-439.

Berthélemy, J. C., & Tichit, A. (2004). Bilateral donors' aid allocation decisions – a three-dimensional panel analysis. *International Review of Economics & Finance, 13*(3), 253-274.

Black, N., & Donald, A. (2001). Evidence based policy: Proceed with care. Commentary: Research must be taken seriously. *BMJ: British Medical Journal, 323*(7307), 275-279.

BMZ (Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung). (2008). *Leitlinien* (BMZ Konzepte 165). Bonn: Author.

BMZ. (2009). *Sector strategy: German development policy in the health sector* (BMZ Strategies 187). Bonn: Author.

BMZ. (2013). *Shaping global health - taking joint action - embracing responsibility* (The Federal Government's Strategy Paper). Berlin: Author.

Brandt, L. J., Chey, W. D., Foxx-Orenstein, A. E., Quigley, E. M., Schiller, L. R., Schoenfeld, P. S., ...Moayyedi, P. (2009). An evidence-based systematic review on the management of irritable bowel syndrome. *American Journal of Gastroenterology*, 104/Supplement 1, 8-35.

Cairney, P., & Oliver, K. (2017). Evidence-based policymaking is not like evidence-based medicine, so how far should you go to bridge the divide between evidence and policy? *Health Research Policy and Systems, 15*(1), 35.

Campbell Collaboration. (2014). *Campbell systematic reviews* (ISSN 1891-1803). Retrieved from https://www.campbellcollaboration.org/campbell-systematic-reviews.html

Cochrane Collaboration. (n.d.) Cochrane website. Retrieved from http://www.cochrane.org/

DAC (Development Assistance Committee). (2008). *The Paris Declaration on Aid Effectiveness and the Accra Agenda for Action*. Paris: Organisation for Economic Co-operation and Development (OECD).

Davies, P., & Boruch, R. (2001). The Campbell Collaboration: Does for public policy what Cochrane does for health. *BMJ: British Medical Journal, 323*(7308), 294.

Davis, P., & Howden-Chapman, P. (1996). Translating research findings into health policy. *Social Science & Medicine, 43*(5), 865-872.

De Geoffroy,V., Léon,V., & Beuret, A. (2015). *Evidence-based decision-making for funding allocations* (Report for the European Commission, Inspire Consortium Humanitarian Policy for Action). Retrieved from http://www.urd.org/IMG/pdf/15_10_01_Evidence_Based_Study_Final.pdf

Dollar, D., & Levin, V. (2006). The increasing selectivity of foreign aid, 1984-2003. *World Development, 34*(12), 2034-2046.

Easterly, W., & Williamson, C. R. (2011). Rhetoric versus reality: The best and worst of aid agency practices. *World Development, 39*(11), 1930-1949.

European Union. (2015). *An evidence-based approach to healthcare in Africa.* Retrieved from https://europa.eu/eyd2015/en/european-union/stories/approach-healthcare-africa

Eyben, R. (2015). *The politics of evidence and results in international: Development.* Rugby: Practical Action Publishing.

Feeny, S., & McGillivray, M. (2008). What determines bilateral aid allocations? Evidence from Time Series Data. *Review of Development Economics, 12*(3), 515-529.

Gandhi, G. (2015). Charting the evolution of approaches employed by the Global Alliance for Vaccines and Immunisations (GAVI) to address inequities in access to immunisation: A systematic qualitative review of GAVI policies, strategies and resource allocation mechanisms through an equity lens (1999-2014). *BMC Public Health, 15*(1), 1198.

GAVI (Global Alliance for Vaccines and Immunisation). (2009a). *Immunisation Services Support (ISS) update*. Retrieved from http://www.gavi.org/library/news/statements/2009/immunisation-services-support-(iss)-update/

GAVI. (2009b). *GAVI Health Systems Strengthening Support Evaluation 2009: Volume 2* (Full Evaluation Report). London: HLSP.

Grittner, A. M. (2013). *Results-based financing: Evidence from performance-based financing in the health sector* (Discussion Paper 6/2013). Bonn: German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE).

Guillaumont, P. (2008). *Adapting aid allocation criteria to development goals. An essay for the 2008 Development Cooperation Forum United Nations Economic and Social Council* (Working Paper). Clermont-Ferrand: Fondation pour les Études et Recherches sur le Développement International (FERDI). Retrieved from https://www.afdb.org/fileadmin/uploads/afdb/Documents/Knowledge/30753783-EN-2.3.1-GUILLAUMONT.PDF

Guillaumont, P., McGillivray, M., & Pham, T. K. C. (2017). Reforming performance-based aid allocation practice. *World Development 90*, 1-5.

Higgins, J., & Green, S. (Eds.). (2006). *Cochrane handbook for systematic reviews of interventions* (Vol. Version 5.1.0., updated March 2011). Chichester: John Wiley & Sons Ltd.

IDS (UK Institute of Development Studies). (2013, April). *The politics of evidence* (Conference Report). Retrieved from http://bigpushforward.net/wp-content/uploads/2013/09/BPF-PoE-conference-report.pdf

Janus, H., & Klingebiel, S. (2016). *Ergebnisbasierte Ansätze: Ein Schlüssel für die entwicklungspolitische Umsetzung der 2030 Agenda?* (Die aktuelle Kolumne, 9 May). Bonn: German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE).

Jones, H. (2012). *Promoting evidence-based decision-making in development agencies* (Background Note). London: Overseas Development Institute (ODI). Retrieved from http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/7575.pdf

Munir, K., & Freund, M. (2016). *German development cooperation's contribution to global health*. Bonn: German Institute for Development Evaluation (DEval).

Munir, K., & Worm, I. (2016). Health systems strengthening in German development cooperation: Making the case for a comprehensive strategy. *Globalization and Health, 12*(1), 81.

Nabudere, H. et al. (2014). *Improving patients safety for better quality of care.* (REACH and SURE Evidence Policy Brief, May 10). Kampala, Uganda: Regional East African Community Health (REACH).

Nunnenkamp, P., & Öhler, H. (2011). Aid allocation through various official and private channels: Need, merit, and self-interest as motives of German donors. *World Development, 39*(3), 308-323.

OECD (Organisation for Economic Co-operation and Development). (2015a). *Development Co-operation Peer Reviews*. Paris: Author.

OECD. (2015b, April). *Aid to health*. Paris: OECD-Development Assistance Committee (DAC). Retrieved from www.oecd.org/stats/health

OECD. (2017). *Aid Statistics.* Paris: Author.

Oxford Living Dictionary. (2017). Oxford: Oxford University Press. Retrieved from https://en.oxforddictionaries.com/

Petrosino, A., Boruch, R. F., Soydan, H., Duggan, L., & Sanchez-Meca, J. (2001). Meeting the challenges of evidence-based policy: The Campbell Collaboration. *The ANNALS of the American academy of political and social science*, *578*(1), 14-34.

Plewis, I. (2000). Educational inequalities and education action zones. In C. Pantazis & D. Gordon (Eds.), *Tackling inequalities: Where are we now and what can be done* (pp. 87-100). Bristol: Bristol University, The Policy Press.

Prinja, S. (2010). Role of ideas and ideologies in evidence-based health policy. *Iranian Journal of Public Health, 39*(1), 64.

PubMed. (n.d.). National Center for Biotechnology Information, US National Library of Medicine. United States. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/

Roodman, D. (2006). *An index of donor performance* (Working Paper 67). London: Center for Global Development (CGD). Retrieved from http://dx.doi.org/10.2139/ssrn.982950

Rudolph, A. (2017). *The concept of SDG-sensitive development cooperation: Implications for OECD-DAC members* (Discussion Paper 1/2017). Bonn: German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE).

Sachs, J. D., & Schmidt-Traub, G. (2017). Global Fund lessons for Sustainable Development Goals. *Science, 356*(6333), 32-33.

Sanderson, I. (2002). Evaluation, policy learning and evidence-based policy making. *Public administration*, *80*(1), 1-22.

Sépou, A., Serdouma, E., Komas, N. P., Gody, C., Abeye, J., Koffi, B., …Gresenguet, G. (2011). Stratégies de réduction de la mortalité maternelle en République Centrafricaine. [EVIPNet Central African Republic]. Retrieved from http://www.who.int/evidence/resources/country_reports/africa/en/index3.html

Stepping, K. (2012). *Do poor health conditions lead to higher allocation of development assistance?* (Joint Discussion Paper Series in Economics 30-2012). The Universities of Aachen/Gießen/Göttingen. Retrieved from https://www.econstor.eu/bitstream/10419/73079/1/718481348.pdf

SURE (The SURE Collaboration – Supporting the Use of Research Evidence) (2011). *SURE Guides for Preparing and Using Evidence-Based Policy Briefs* (Version 2.1). Retrieved from www.evipnet.org/sure

Tierney, M. J., Nielson, D. L., Hawkins, D. G., Roberts, J. T., Findley, M. G., Powers, R. M., …Hicks, R. L. (2011). More dollars than sense: Refining our knowledge of development finance using AidData. *World Development 39*(11), 1891-1906.

Thiele, R., Nunnenkamp, P., & Dreher, A. (2007). Do donors target aid in line with the Millennium Development Goals? A sector perspective of aid allocation. *Review of World Economics, 143*(4), 596-630.

UN (United Nations). (2005). *UN Millennium Project. Investing in development: A practical plan to achieve the Millennium Development Goals*. New York: Author.

UN General Assembly. (2015, October). *Transforming our world: The 2030 agenda for sustainable development*. A/RES/70/1, 21 October.

WHO. (2012). *WHO handbook for guideline development.* Geneva: Author.

WHO. (2014). *Not merely the absence of disease* (Twelfth general programme of work 2014-2019.) Geneva: Author.

WHO. (22 May 2015). *Address by Her Excellency Angela Merkel, The Federal Chancellor of the Federal Republic of Germany, to the Sixty-Eight World Health Assembly.* Geneva, Switzerland. Retrieved from http://www.who.int/about/funding/germanybilateral/en/ and http://apps.who.int/iris/bitstream/10665/253223/1/A68_DIV5-en.pdf

WHO. (2016). *EVIPNet in action: 10 years, 10 stories.* Geneva: Author. Retrieved from http://www.who.int/evidence/about/en/

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