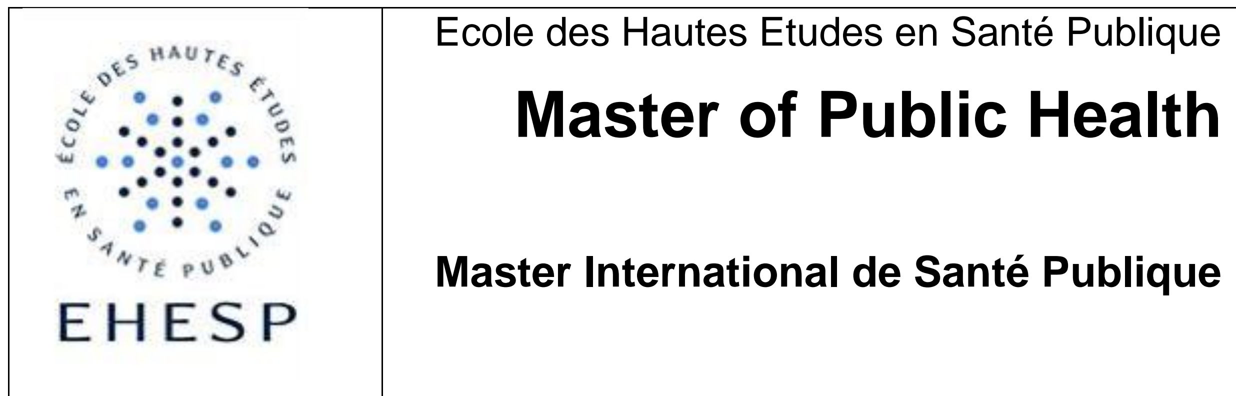

Ecole des Hautes Etudes en Santé Publique

Master of Public Health

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Improving assessment and reporting of the health impact of development aid for health

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Location of the practicum: European Academic Global Health Alliance (EAGHA)

Professional advisor:

Professor Sir Andy Haines

Chair, EAGHA

Professor of Public Health and Primary Care, London School of Hygiene and Tropical Medicine

Academic advisor:

Professor Antoine Flahault

Dean, Ecole des Hautes Etudes en Santé Publique

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I. Acronyms

BTC	Belgian Development Corporation
CIDA	Canadian International Development Agency
COHRED	Council on Health Research for Development
DALYs	Disability adjusted life years
DFID	Department for International Development
DTP1	Diphtheria-tetanus-pertussis vaccine first dose
DTP3	Diphtheria-tetanus-pertussis vaccine third dose
EAGHA	European Academic Global Health Alliance
EHESP	Ecole des Hautes Etudes en Santé Publique
EU	European Union
GAVI	Global Alliance for Vaccines and Immunisation
GFATM	Global Fund to Fight AIDS, Tuberculosis, and Malaria
G8	Group of eight countries
HIAs	Health Impact Accounts
HSS	Health system strengthening
IHP+	International Health Partnerships
M&E	Monitoring and Evaluation
MDGs	Millennium Development Goals
NGOs	Non-governmental Organisations
OECD	Organisation for Economic Co-operation and Development
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
SWAps	Sector Wide Approaches
TB	Tuberculosis
WBG	World Bank Group
WHO	World Health Organization

II. Abstract

Objectives

Development agencies increasingly communicate health impact attributed to funding they have provided in terms of lives saved. While this metric is compelling and easy-to-understand, it underestimates health system contributions and diverts funding decisions towards purchase of commodities rather than health system strengthening. There is limited evidence about strategies for improving and harmonising approaches to assessing and reporting the health impact of aid. This study aims to provide a better understanding of and strategies for improving and harmonising approaches.

Methods

This is a non-experimental, descriptive, qualitative study. A literature review of Pubmed and websites of key development agencies was conducted for English language documents, published after 2007 and assessing health impact of aid. Thirty-six of 204 documents met the criteria. Semi-structured phone interviews were conducted with seven key informants purposively selected from development agencies, research/academia, and partner countries. Thematic analysis was conducted. Themes were derived inductively and deductively.

Results and Analysis

Development agencies frequently use lives saved and deaths averted metrics and track progress on mortality, morbidity, and coverage indicators for disease-specific interventions. Key methodological challenges of these approaches were double counting, underestimating health system contributions, and overlooking system-wide impact. Suggested strategies for improving and harmonising approaches to assessing and reporting health impact include:

1.aligning approaches used by development agencies with national mechanisms and

2.developing second-generation lives saved metrics that apportion credit to national and external funding sources based on their contributions to service delivery.

Conclusion

A systematic and harmonised approach will pose methodological challenges but has the potential to enhance comparability across different agencies, give credit to national health systems, encourage investments in health system strengthening, and provide transparency in assessing aid impact. Experts, development agencies, and partner countries should collaborate on developing and advocating for an improved and harmonised approach.

Keywords

Development aid for health, impact assessment, global health, international health, health system strengthening

Comment améliorer l'évaluation et l'étude de l'impact sur la santé de l'aide au développement?

Résumé

Objectifs

Les agences d'aide au développement évaluent l'impact sur la santé des aides internationales essentiellement en termes de vies sauvées. Bien que cette métrique soit convaincante et facile à comprendre, elle sous-estime les contributions des systèmes de santé nationaux et oriente les décisions de financement vers les structures et produits de santé plutôt que vers un renforcement des systèmes de santé eux-mêmes. Il n'y a pas encore beaucoup d'études probantes sur les stratégies utilisées pour améliorer et harmoniser les approches mises en place pour l'évaluation et l'étude de l'impact sur la santé des aides internationales. Notre recherche vise ici à mieux comprendre les stratégies à recommander pour améliorer et harmoniser les approches.

Méthodes

Une revue systématique non-expérimentale, descriptive et qualitative a été conduite. Pubmed et les sites Web des agences de développement clés ont été utilisés pour rechercher tous les documents en langue anglaise, publié après 2007, évaluant l'impact sur la santé des aides internationales au développement. Trente-six des 204 documents répondaient aux critères retenus. Des entretiens téléphoniques semi-structurés ont été menés avec sept acteurs clés choisis auprès d'agences de développement, de la communauté scientifique experte du domaine, et de pays partenaires. Une analyse thématique a été menée, et des thèmes ont été retenus de manière inductive et déductive.

Résultats

Les agences d'aide au développement utilisent fréquemment les approches reposant sur les métriques « vies sauvées » et « décès évités » ; elles suivent les évolution de la mortalité et de la morbidité pour mesurer l'impact sanitaire de leurs aides. Les principaux problèmes méthodologiques rencontrés dans ces approches sont la double attribution des vies sauvées ou des décès évités, la sous-estimation des contributions des systèmes de santé nationaux, et la non prise en compte de l'impact des aides sur le système de santé lui-même. Les stratégies suggérées pour améliorer et harmoniser les approches comprennent : 1.le rapprochement des approches utilisées par les agences d'aide au développement avec les mécanismes nationaux et 2.le développement d'indicateur de seconde génération portant sur les mesures de vies sauvées pour piloter en particulier les sources de financement nationales et extérieures fondées sur les résultats obtenus.

Conclusion

Une approche systématique et harmonisée pose encore des défis méthodologiques, mais permettrait de comparer les différentes agences d'aide au développement, crédibiliserait les systèmes de santé nationaux, et encouragerait les investissements visant au renforcement des systèmes de santé, et assurerait la transparence de l'évaluation de l'impact de l'aide. Les experts, les agences d'aide au développement et les pays partenaires devraient mieux collaborer et promouvoir une approche plus rigoureuse et harmonisée.

III. Introduction

In the past decade, the Millennium Development Goals (MDGs) have raised awareness about global health challenges and have probably contributed to the substantially increased funding for programmes aimed at reducing maternal and child mortality and the burden of HIV/AIDS, tuberculosis (TB), and malaria [1-3]. Although significant progress has been achieved in health MDGs, evidence shows that progress has not been universal, and in some instances, it has stagnated or reversed. Likewise, commitments made at the Gleneagles summit for increased development aid by the group of eight (G8) countries have not been kept [4]. Accelerated and sustainable movement towards achieving the MDGs by 2015 requires improved health investments [5,6]. At the same time, increased health investments are accompanied by increased demands on development agencies and partner countries to demonstrate the impact of investments, as a major element of their joint accountability to donor governments and their taxpayers [1,7-9]. In response, development agencies communicate results in aggregate health impact estimates, such as lives saved, as they are easy-to-understand and compelling to non-experts. However, these estimates face major methodological and ethical challenges. Fundamentally, by attributing health impact to single interventions (e.g. commodity purchasing) or specific funds, these measures undermine the contribution of health systems to achieving impact [7,9]. This may divert decisions towards the funding of commodities rather than health system strengthening (HSS) interventions. Evidence indicates that weak health systems are one of the main bottlenecks to achieving health MDGs and that HSS and integrated funding flows are required [6]. Furthermore, most bilateral development agencies have committed themselves to the aid effectiveness principles put forward by the Paris Declaration (2005) and Accra Agenda (2008). These principles aim at national ownership and leadership, as well as harmonisation and alignment by development agencies behind a national health plan [10]. As such, since 2005 much of development aid is embedded in national policies and delivered through national delivery systems. Consequently, it becomes ever more difficult to attribute sector results to any specific fund. Yet development agencies continue to report "their results" [9].

The literature is inconclusive regarding the best way of assessing and communicating the health impact of aid [1,7,9,11]. One approach is the Health Impact Accounts (HIAs), which is currently under development by the World Bank Group (WBG) in collaboration with the Institute for Health Metrics and Evaluation. This approach suggests improving the lives saved metric by identifying critical value chains (such as infrastructure, transportation, procurement systems, etc.) involved in the implementation of interventions (whether disease-specific or HSS interventions) at the country-level. It then apportions credit for improvement to all investors, including domestic sources, according to their relative contribution to different components of the value chain. However, HIAs is still under development and its feasibility

needs to be demonstrated [7]. Another approach advocates the establishment of a national evaluation platform for large-scale programmes. This platform uses the district as the unit of design and analysis and is based on continuous monitoring of different levels of indicators. This approach requires major financial investments and further evaluation [1]. The International Health Partnerships (IHP+), which is a partnership between partner countries and developing agencies, aims at alignment of development agencies and partner countries around single country-led health plans. It promotes approaches that are aligned with existing country processes and presents results in visually attractive scorecards and stories about country changes [11]. The extent to which the IHP+ support to improved monitoring of national health strategies produces improved output information that could serve as a basis for further health impact assessment remains to be explored [9].

Recently, the European Academic Global Health Alliance (EAGHA), which is a forum of academics aiming to influence policies on global health, along with the European Commission Development Cooperation–Europe Aid, and The Lancet jointly organized a high-level workshop in Brussels to address challenges inherent to how development agencies assess and communicate the health impact of their investments [9]. The workshop gathered key participants from European and international development agencies, the European Commission, academia, and partner countries to discuss shared principles towards improving approaches to assessing and reporting the health impact of aid. There was strong support among participants that approaches to assessment and reporting should primarily respond to country needs. Approaches should explicitly focus on strengthening country ownership and capacity and should build upon country-owned monitoring and evaluation (M&E) platforms, without overloading countries. They should also identify the contextual factors that contribute to the observed results to enable a better understanding of how development aid works. At the same time, they should serve the needs of donors and their accountability to political and public constituencies. Hence, they should be timely, simple, and compelling to non-experts. The workshop also advocated harmonising approaches across development agencies [9]. Harmonised assessment and reporting of health impact would allow valid interagency comparisons and support evidence-based decisions for the allocation of resources to different channels of aid [1,12].

Building on the principles proposed at the workshop, this study aims to provide a better understanding of approaches to assessing and reporting the health impact of aid to inform discussions about improved and harmonised approaches. The most commonly used definition of impact in development aid is “the positive and negative, primary and secondary, long-term effects produced by a development intervention, directly or indirectly, intended or unintended” [13]. An important point to mention at the outset is that this study focuses on

health status (e.g. mortality and morbidity) and health system impact. This study does not make reference to socioeconomic, environmental, behavioural, and genetic determinants of health, despite their strong influence on health status and health systems. Previous attempts to address broader health determinants have proved difficult to manage comprehensively. Besides, healthcare systems are often the main domain that policymakers can affect and these are acknowledged to sit within larger health systems [14]. As such, the objectives of this study are to:

1. Describe approaches to assessing and reporting the health impact of development aid for health, their uses, and methodological challenges, and how they can include an assessment of their interaction with national health systems
2. Identify strategies for improving and harmonising approaches to assessing and reporting the health impact of development aid for health

IV. Methods

This study used a non-experimental, descriptive, qualitative design. Data sources and methods included written documents identified via literature review and interview data obtained through semi-structured key informant interviews. The use of two different methods for data collection provided in-depth analysis and enabled cross-checking of information across different data sources for consistency. The literature review and key informant interviews took place concurrently from February 12th to May 22nd 2012.

1. Literature review

In order to describe approaches to assessing and reporting the health impact of aid, a review of peer-reviewed and grey literature was conducted. The database Pubmed was searched using a search strategy developed with the assistance of an information specialist: ("World Health"[Mesh] OR "Public Health"[Mesh]) AND "Financial Support"[Mesh] AND "International Cooperation"[Majr]) Limits: English, last 5 years (2007- 2012), and Humans. Pubmed includes citations from the fields of biomedicine and health. Pubmed was used for conducting literature reviews on tracking development aid for health in previous studies [15,16]. Websites of development agencies were also searched, specifically websites on results and M&E activities of development agencies. Development agencies included public private partnerships, private foundations, development banks, bilateral agencies, UN agencies, and non-governmental organisations (NGOs) dedicated to distributing development aid for health to partner countries (whether governments or NGOs) to implement programs for improving health [17]. The websites of the Global Fund to Fight AIDS, Tuberculosis, and Malaria (GFATM); Belgian Development Corporation (BTC); Global Alliance for Vaccines and Immunisation (GAVI); and the Canadian International Development Agency (CIDA) were searched thus far due to time constraints. These are amongst the major contributors to development aid for health [17].

Inclusion criteria for the literature review were as follows:

1. Documents published in English language between 2007 and February 2012. The year 2000 marks the launch of the MDGs and subsequently a surge in development aid for achieving the MDGs as well as increasing requirements for development agencies and partner countries to assess and report health impact of aid to their constituencies [18,19]. The date restriction for publications following the year 2007 increased the likelihood that enough time had been given to examine the long-term effects of these investments.

2. Documents that assessed health outcomes, impact, or results[1] of interventions supported by development aid for health, including concessional and non-concessional loans and funds from Organisation for Economic Co-operation and Development (OECD) and non-OECD countries and private institutions. The reason why documents that assessed outcomes (as distinct from impacts) were included in the literature review was that, in some evaluations, outcomes (often also called effects or results) were synonymous with impacts. Furthermore, trends on outcome indicators could be tracked over time to measure the impact of development aid [13,20,21].

Exclusion criteria included:

1. Non-English language documents published before 2007 or after February 2012
2. Documents that assessed health outcomes, impact, or results of external financing not directly provided to health (e.g. International Monetary Funds, welfare, etc.)
3. Documents that assessed health outcomes, impact, results of health financing, where development aid was not assessed separately (e.g. total health expenditures)
4. Documents that did not assess health outcomes, impact, or results of development aid for health (e.g. background and context on development aid for health, research production, number of trained researchers and their accomplishments in developing countries, financial tracking of development assistance for health, etc.).

In order to facilitate analysis of the literature on how approaches to assessing and reporting the health impact of aid can include an assessment of the interaction of development aid with national health systems, a conceptual framework was adapted from World Health Organization (WHO) Country Maximizing Positive Synergies Collaborative Group (2009) [22]. This conceptual framework identified six points of interaction of development aid with national health systems: Governance, Finance, Health Workforce, Health Information Systems, Supply Management Systems, and Delivery of Health Services. It also identified factors that affect the impact of the interactions of development aid on the health system (Table 1). There was lack of a commonly used and agreed upon conceptual framework to understand the interactions between development aid for health and national health systems in the literature [11,22-24]. The rationale for selecting this conceptual framework for analysis was that it complemented the WHO building blocks framework by combining it with another framework that described policy 'levers' that would allow policymakers to achieve health system objectives and goals. These levers included organization, regulation, resource allocation, and service provision [23]. Although the use of

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[1] OECD defines the components of the logical framework, which shows how an intervention is expected to influence long-term results or impact, as such:
Inputs: financial, human, and material resources used for the development intervention.
Outputs: products, capital goods and services which result from a development intervention.
Outcomes: likely or achieved short-term and medium-term effects of an intervention's outputs.
Impact: positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended [12].

the word ‘levers’ implies a mechanistic approach rather than one based on complex systems, the framework included a comprehensive list of factors that affect the impact of interactions on the health system- including intended or unintended impact of development aid on the health system. The framework also included the role of the community in planning, regulation, implementation and improvement of health system responsiveness, oversight of programme performance, implementation and service delivery, and advocacy for policy reform. Similar to other frameworks, the selected framework did not address the underlying social and economic determinants of health and how global factors could influence those determinants both positively and negatively, for example through trade policies. However, focusing on specific points of interaction within the health system, helped put boundaries around the complexity of health systems [12,24].

A second reviewer independently tested the inclusion and exclusion criteria and applicability of the conceptual framework for the analysis. Minimal differences were found between the main reviewer and the second reviewer on the tested document.

Table 1. Conceptual framework to guide analysis of approaches to assessing the interactions of aid with the health system [22]

Points of interaction	Factors that affect the impact of the interactions on the health system
1. Governance	• Planning, regulation and coordination at the national and subnational levels (especially with regard to external partners) including development of transparent and rigorous national priority setting processes • Community involvement in planning, implementation, improvement of health system responsiveness, oversight of programme performance, implementation and service delivery, and advocacy for policy reform
2. Finance	• Amount and stability of funding • Relative size of domestic budget allocations for health versus external support • Out-of-pocket payments by service users • Aid effectiveness (harmonisation, ownership, alignment, results, mutual accountability)*, predictability and sustainability of funding
3. Health workforce	• Production, retention and performance • Distribution
4. Health information systems	• Availability and accuracy of good-quality information to assess trends in health and the performance of the health system • Availability of good-quality research to inform decision making and the generation and implementation of new knowledge from research • Demand and use of information by various users, including the degree to which there is alignment of information requirements between donors and the national health system • Innovation in health information systems

Points of interaction	Factors that affect the impact of the interactions on the health system
5. Supply management systems of essential health commodities and technologies	• Procurement and distribution (extent and reliability) • Quality • Affordability
6. Delivery of health services	• Access and uptake of target and non-target services that could be plausibly affected • Equity in delivering target services among all groups and equity between delivering target and non-target services • Service quality improvements e.g. through promoting standardized treatment and prevention guidelines; patient adherence to treatment; and availability of health service providers

* Aid effectiveness factors are most relevant to external financing; however, they are also relevant to other health system areas

2. Key informant interviews

Semi-structured interviews were conducted with key informants to 1. provide a comprehensive understanding of approaches to assessing and reporting the health impact of aid, uses, and methodological challenges by cross-checking of information with the literature review; and 2. identify strategies for improving and harmonising approaches to assessing and reporting the health impact of aid.

Key informants were purposively selected from a sampling frame consisting of four main categories developed based on Kingdon's categorization of stakeholders [20] (Table 2). The descriptive roles corresponding to these categories were adapted from a previous study on development aid for health [25]. The first category was European and international development agencies for health. The descriptive roles corresponding to this category were senior managers of development agencies or program managers responsible for assessing and reporting of the health impact of aid. The second category was public policymakers in the European Union (EU) policy sphere. The descriptive roles corresponding to this category were government officials, senior staff from the European Commission, or members from the Parliamentary Development committee. The focus on the EU policy sphere was mainly due to the central role of the EU as a major contributor to development aid for health and its strong commitment to improving aid effectiveness and supporting the adoption of the Paris Declaration on Aid Effectiveness [17,26]. The third category was key informants from partner countries. The corresponding descriptive roles were government officials or program managers in large NGOs for health in partner countries, in addition to non-state implementers including local and international NGOs, private sector, university collaborations, faith-based organisations, and philanthropic foundations. Key informants from the above three main categories were selected from positions where they were responsible for health policy decisions and planning in their organisations. The fourth category consisted of

researchers or academics and the corresponding descriptive roles included those with expertise in the international health and health impact assessment of aid. The target sample size ranged from eight to twelve participants, for reasons of practicality. Key informants were selected from the list of participants who attended the workshop in Brussels and through nominations made by experts in the field of global health (Table 2).

Table 2. Sampling frame

Category	Descriptive role
1. European and international development agencies for health	Senior managers in European and international development agencies
	Program managers responsible for assessing and reporting the health impact of aid
2. Public policymakers in the European Union policy sphere	Government officials
	Senior staff in the European Commission
	Members of the Parliamentary Development committee
3. Partner countries*	Government officials
	Program managers in large NGOs
	Non-state implementers (local and international NGOs, private sector, faith-based organisations, philanthropic foundations, and university collaborations such as Partners in Health at Harvard)
4. Researchers or academics	Researchers or academics with expertise in the international development field and health impact assessment

* Purposively selected key informants from Zambia, Timor-Leste, Malawi, Lesotho, Rwanda, Haiti, Mozambique, Cambodia, Uganda, Senegal, Tanzania, Benin, Afghanistan, Sierra Leone, and Mali, all accounting for around half of total official development aid for health [27]

A semi- structured interview tool was developed and assessed for content and face validity prior to administration. A global health expert, the chair of EAGHA, was asked to indicate approval or disapproval of the questions, add, remove or reword questions for content validity. The readability and clarity of the questions were also evaluated for face validity [28]. Interview questions covered the following main issues: approaches used to assess and report the health impact of aid, their uses, and challenges; as well as challenges, enablers, and strategies to improving and harmonising approaches to assessing and reporting the health impact of aid, if any (Annex 1).

Key informants were first targeted by email to request their participation. If they agreed to participate, a letter of participation discussing the objective of the project and confidentiality (Annex 2) and an outline of questions (Annex 1) were sent to participants to guide discussion. Phone interviews (with an average duration of 30 minutes) were conducted

with respondents. There are well-documented advantages of using phone interviews in qualitative research including cost-effectiveness in terms of time and money, minimum disruption to respondents, and flexibility, as well as comparability with face-to-face interviews [29,30]. Responses were tape-recorded for all but two interviewees, based on their request. Extensive notes were taken during these two interviews. Responses were transcribed verbatim thereafter (Annex 3 presents an example of a verbatim transcript). Participants were assured that their responses would remain confidential, their names would be coded, and that they would remain unquoted if they preferred. Permission was obtained from participants prior to quoting them by their specific positions. Data would be disposed of two years following the end of the study by shredding notes and deleting all recordings. Study protocol followed approved procedures at EHESP.

Data analysis

Where applicable, findings from the literature review were compared and cross-checked with those from the interviews. Thematic analysis was used to analyse transcripts and organise the literature review [31]. Responses and findings from the literature review were coded and brought together in a spreadsheet to better manage the data. Open coding was conducted first; findings were broken into chunks that relate to different concepts or ideas. Axial coding was then conducted, which involved organizing these concepts into themes. Themes were identified inductively and deductively. Some themes were identified from the literature and from interview questions. These included approaches to assessing health impact and the interaction of development aid with health systems, methodological challenges; and strategies to improving these approaches; as well as challenges and strategies for harmonising approaches. Additional themes emerged during the analysis, such as approaches to attributing impact to a specific source of funding, challenges, and strategies to overcome these challenges.

V. Results

A total of 204 documents were retrieved from Pubmed and websites of four development agencies (GAVI, GFATM, BTG, and CIDA). Of these, a total of 36 documents met the inclusion criteria for assessing health outcomes, impact, or results of interventions supported by development aid. Annex 4 presents a flow chart detailing the number of studies retrieved and assessed for eligibility with reasons for exclusion and inclusion.

Out of 12 key informants invited to participate, seven were interviewed (response rate 58.3%). Table 3 shows the descriptive roles of these interviewees. All interviewees had more than three years of experience in their current roles.

Category	Descriptive role
Development agencies	• Lead Advisor for Health Policy and Strategy at the WBG • Head of Profession Health at the Department for International Development (DFID) • Director of M&E at GAVI • Director of M&E *
Partner countries	• Senior health advisor at Council on Health Research for Development (COHRED) and Chair of the Forum 2012 Steering Committee. Previously, founding Director of the Partnership for Maternal, Newborn and Child Health, and Minister of Health of Mozambique.
Researchers or academics	• Director of the International Center for Reproductive Health • Researcher in Health Systems Research Mapping and Global Health at the Institute of Tropical Medicine

Table 3. Descriptive roles of participants

* Interviewee did not give permission to be quoted

The following sections present the main themes from the literature review and interviews. Tables 4, 5, and 6 present results by data sources (literature review and interviews).

1. Approaches to assessing and reporting the health impact of aid

Two main approaches to assessing and reporting the health impact of aid were identified form the literature review and the interviews: 1. Estimating lives saved and deaths averted metrics and 2. Tracking trends in mortality, morbidity, and coverage indicators. The first approach was based on observation of what happened when an intervention was implemented in comparison with 1) similar areas during the same period and/or 2) with the same area before a new intervention was implemented and/or 3) with a hypothetical scenario for the same area during the same time period. The second approach analysed trends in impact indicators in combination with trends in indicators that measured the implementation of the intervention. If changes in indicators of implementation of the

intervention explained changes in impact indicators, then this could be used as evidence of intervention impact [32].

1.1. Lives saved and deaths averted

Development agencies mainly used the metrics lives saved or deaths averted to quantify the likely impact from development aid targeting disease-specific interventions (as distinct from HSS interventions) (Table 4). Peer-reviewed models were used to estimate these measures based on estimated coverage of interventions with well-documented mortality outcomes. For example, the GFATM estimated lives saved for disease-specific interventions such as antiretroviral therapy and the distribution of insecticide-treated nets that have well-known mortality outcomes (Table 4).

Key informants explained that the use of lives saved and deaths averted metrics was driven by the need for meeting the demands of a "political-authorizing environment" that required compelling and easy-to-understand metrics. As the Head of Profession Health at DFID elaborated:

> "One of the main reasons for measuring aid impact is to justify it to taxpayers. Whilst ensuring that any system [to aid delivery] supports national systems, we need to recognize that there are domestic requirements for [assessing impact], which is what helps to maintain aid flow. Sometimes the way we end up articulating the contribution of aid is not always the most helpful way in terms of the countries' needs. We want to get good news stories to the media about how aid is making an impact in a way that the public can understand. [Therefore], we start talking about the number of lives saved that has been contributed to by [the aid of our development agency]."

The demand for rapid and compelling information was also felt by partner countries; as the Senior Health Advisor at COHRED, who was also the previous Minister of Health of Mozambique, indicated:

> "There is lack of patience from the donor side. They want to see results immediately (6 months-1 year) instead of waiting two years [or more]. This does not address the problem of countries. We need strong advocacy with strong support from academic institutions to make the constituencies from the donor side understand that indicators need to capture the development of the country."

On the other hand, disability adjusted life years (DALYs) averted or life years gained due to specific interventions (e.g. antiretroviral therapy) were not frequently used by development agencies [31,46]. These measures capture improvements in health (DALYs averted) and specify number of life years gained; in contrast to the metric lives saved which lacked a standard minimum number of life years saved that would be counted as a life saved. As such, saving a life could at the extreme be adding one day by resuscitating a severely ill

patient or adding 70 years of life to a child that would have died from meningitis [7]. However, key informants from development agencies considered (DALYs) averted to be more complex to understand and less compelling to donors and their constituencies than lives saved metrics.

Methodological challenges

Several methodological challenges were identified from the literature. Lives saved were calculated on the basis of service delivery and mortality assumptions rather than direct measurements. As such, they excluded a large number of activities for which mortality outcomes were not clearly documented, such as condom distribution and HSS interventions. In contrast to cause-specific mortality measurements, which should be mutually exclusive, a life could be saved (and thus counted) more than once. In addition, lives saved estimates did not include threshold effects, such as the increasing effectiveness of insecticide-treated nets when coverage exceeding 60%.

Furthermore, the increased focus of development agencies on assessing and reporting health impacts in terms of deaths averted and lives saved might have resulted in overlooking other important intended or unintended consequences of aid on the health system. For example, some programmes on diseases nearing eradication were likely to have more important impacts than lives saved such as cost-savings following eradication, which presented an opportunity to draw on more resources.

Lives saved were estimated compared with a counterfactual scenario of "no intervention", which was assumed from baseline data or estimated from a comparable population that did not receive the intervention. While in reality, even without aid, services were likely to be maintained at some level through other sources of funding such as domestic and out-of-pocket expenditure. Both the literature review and interviews concurred that the lives saved approach underestimated the contribution of the multiple components of the health system in achieving impact (Table 4).

1.2. Mortality, morbidity, and coverage

Another approach to assessing and reporting the health impact of aid targeting disease-specific interventions was to track progress on mortality, morbidity, and coverage indicators of key interventions, especially those related to the health MDGs such as under-five and maternal mortality rates (Table 4).

The literature review also showed that this approach was used to assess the health impact of development aid targeting HSS interventions. For example, to measure progress against HSS interventions, GAVI tracked drop out rates between diphtheria-tetanus-pertussis vaccine first dose (DTP1) and third dose (DTP3), DTP3 coverage rates, equity in immunisation coverage, child mortality rates, and number of births assisted by a skilled birth

attendant. The GFATM assessed the impact of a HSS intervention in Rwanda that subsidised health insurance for the poor by measuring under-five mortality, HIV seroprevalence, TB treatment completion rates, and health service utilisation compared to before the intervention (Table 4).

Methodological challenges

Main methodological challenges as identified in the literature included lack of reliable data and lack of disaggregation by age, sex, socioeconomic groups, and geographic location for some of these indicators. Furthermore, assessing the health impact of HSS interventions was particularly challenging due to the complex causal pathways through which these interventions were likely to have an impact. As illustrated by the preceding example on GAVI, most measures used for assessing HSS interventions were disease-specific (e.g. focused on immunization), although many HSS activities addressed health status more generally. Furthermore, gaps in tracking input (e.g. HSS expenditures) and output indicators (e.g. number of training events conducted, number of clinics built) limited the ability of impact assessment activities to fully describe the sequence of inputs, activities, outputs, and outcomes, leading to impact (Table 4).

1.3. Strategies for improvement

Key informants asserted that building country capacity and strengthening information sources in partner countries were critical for improving impact assessment of both disease-specific and HSS interventions. Furthermore, the Lead Advisor for Health Policy and Strategy at the WBG advocated testing the feasibility of the HIAs, given the political demand for compelling and easy-to-understand metrics (Table 4).

Table 4. Approaches to assessing and reporting the health impact of aid, challenges, and strategies for improvement, by data sources

Approaches	Literature review	Interviews	Literature review sources
1. Lives saved and deaths averted	• Based on observational data and comparisons with counterfactual • Measured health impact of disease-specific interventions	• Compelling and simple to non-experts • Measured health impact of disease-specific interventions	33, 35, 36, 37, 38, 41, 43, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68
Methodological challenges	• Underestimated the contribution of multiple components of the health system • Excluded services with unknown mortality outcomes • Counted lives saved multiple times • Excluded threshold effects • Overlooked system-wide impact of aid • Used fixed assumptions regarding the translation of service delivery into population coverage and service quality across countries	• Underestimated the contribution of multiple components of the health system	33, 47
2. Mortality, morbidity, and coverage	• Analysed trends in impact indicators in combination with implementation indicators • Measured health impact of disease specific interventions and HSS interventions	• Measured health impact of disease-specific interventions	35, 36, 37, 38, 39, 40, 41, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68
Methodological challenges	• Lack of reliable data and disaggregation • Assessed HSS interventions with disease-specific measures • Gaps in tracking input and output indicators	• Not discussed	39, 40, 41, 48, 53
Strategies	• Not identified in the reviewed literature	• Build country capacity and M&E platforms • Health Impact Accounts (HIAs) • Develop a common methodology for tracking HSS expenditure	

2. Approaches to assessing interactions of development aid with the country health system

Analysis of approaches to assessing interactions of development aid with the health system was guided by the conceptual framework described in the Methods section. For detailed analysis of the literature review on this section, and the number of documents addressing each point of interaction, please refer to **Annex 5**. Most of the reviewed documents included an assessment of the interaction of development aid with at least one point of interaction with the health system, most frequently the Finance and Delivery of Health Services components of the health system. Other points of interaction with the health system, namely Governance, Health Workforce, Health Information Systems, and Supply Management Systems were rarely assessed (**Annex 5**). The interaction of aid with the Finance component of the health system was measured in terms of the amount of funding support to target services, predictability and sustainability of funding, domestic resource allocation, as well as adherence to principles of aid effectiveness. The interaction of aid with the Delivery of Health Services component of the health system was assessed in terms of coverage and equity of coverage of disease-specific and HSS interventions (Table 5).

Methodological challenges

The literature review indicated that these approaches were retrospective and lacked data on contextual factors. Furthermore, data on health system building blocks were generally limited or of poor quality. Key informants emphasised that measuring the impact of development aid on the country's health system was highly complex, due to the complexity of health systems and the complex causal pathways leading to health system impact. A Senior Health Advisor at COHRED, who was also the previous Minister of Health of Mozambique, highlighted a significant gap in assessing system-wide impact of aid:

> "There are negative consequences of aid [that we are missing out on]. We are missing out on important aspects of country development that are not being met by the way aid is being addressed. [As such], countries must be heard and their perspectives taken into account."

Strategies for improvement

There was consensus among interviewees on the need for measurable and meaningful indicators that can be used to reflect the impact of aid on the health system, without overburdening countries. The Head of Profession Health at DFID expressed this need:

“[Assessing and reporting the impact of aid on the health system] is one area where we do not really have accepted indicators. We tend to measure what can be easily counted, but that does not necessarily measure health system impact.”

Table 5. Approaches to assessing interactions of aid with the health system, challenges, and strategies for improvement by data sources

Factors that affect the impact of the interaction of aid with the health system	Literature review	Interviews	Literature review sources
1. Finance			
Amount of funding	• Resources mobilised for support of targeted interventions to meet country demand and increases in government budgets for target services		
Domestic budget allocations	• Share of the government to national health expenditure • Fungibility risk: risk that donor support will substitute national spending		
Aid effectiveness	• Use of programme-based approaches • Extent to which the funding application is country driven • Use of country procurement systems	• Not discussed	34, 35, 36, 37, 38, 39, 41, 42, 43, 44, 48
Sustainability	• Fulfillment of co-financing commitments: measures country commitment to financing, and thus a reflection of the sustainability of country financing		
Predictability	• Proportion of funding being noted as 'secure' • Resources mobilised to finance country demand		
2. Delivery of health services			
Access or coverage	• Coverage rates for key interventions		
Equity in services	• Equity in coverage of key target and non- target interventions • Disparities in equity of coverage was measured based on urban/rural residence, gender, mother's education, birth order, and asset indices	• Not discussed	33, 35, 36, 37, 38, 39, 40, 44, 47, 48, 50, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68
Service quality	• Treatment success rates, readiness of health services, adherence to international guidelines for treating major diseases		
Challenges	• Lack of data on contextual factors • Retrospective nature of assessment • Limited or poor quality data on components of health system	• Complexity of health systems and causal pathways leading to health system impact	36, 53, 48
Strategies	• Not identified in the reviewed literature	• Identify and develop measurable and meaningful indicators, without overburdening countries	

3. Approaches to attributing health impact to specific sources of aid

Attributing health impacts to specific sources of funding was identified as a critical challenge for development agencies by the literature review and key informant interviews. The tension between attribution and contribution was illustrated by the Head of Profession Health at DFID:

> "When [we] try to measure the performance of countries and link it to [our] financing, we often need to [ask] whether this [impact] is something that can be attributed to our aid, or whether it is something we have contributed to?"

The approaches presented below were utilised by development agencies to address the tension between attribution and contribution to health impact (Table 6).

3.1. Determining counterfactuals

Identifying a plausible counterfactual scenario of "no intervention" was emphasized in the literature as key to determining attribution of health impact.

Methodological challenges

Establishing plausible counterfactuals and identifying the evidence for these counterfactuals was a major challenge, since an ideal 'control group' was difficult to identify. For example, in the case of GAVI, most eligible countries for GAVI support received funding from GAVI. Due to their small number, GAVI eligible countries that did not receive funding support from GAVI were not used as a control group. Instead, non-eligible GAVI countries that were similar to GAVI eligible countries were used for comparison but they differed substantially from countries receiving GAVI support and they might not have been an ideal control group (Table 6).

3.2. Estimating exclusive attribution

Another approach to attributing impact was to assume that attribution of results was a proportion commensurate with the development agency's contribution to the overall investment. As the Head Profession Health at DFID illustrated:

> "If we are financing a project on buying and distributing bed nets, it is quite easy to say that 100,000 bed nets have been distributed using [our] money and that so many children sleep under these bed nets, and that can all be attributed directly to [us]. However, if we are contributing to distributing 100,000 bed nets [with other funding sources] then direct financial contribution takes a certain percentage share [of the delivery of these bed nets]."

This key informant also suggested that determining exclusive attribution was one way to evade counting results multiple times across agencies, which occurred when development

agencies took a share of what other development agencies' and the country's health system have delivered when reporting the impact of their investments.

Methodological challenges

This approach increased the pressure on already weakened health systems to generate additional information to better allow development agencies to attribute health impact to their investments (Table 6). Furthermore, the Director of M&E at GAVI argued that trying to estimate some agency's impact in terms of exclusive attribution by breaking a country's impact and giving shares of it to development agencies underestimates the role of the country's health system including the health workers, infrastructure, etc. that are used to deliver interventions. This respondent explained:

> "The causal changes are highly complex and the impact is a joint product of many [donors and country's] activities. There is a whole series of necessary and sufficient causes on their own that have to be in place for an impact to be produced. It is not like one of those factors in itself is independently producing some fractional impact that considers to a total. The impact is actually caused by the interplay between lots of different factors together and the causal pathways are too complex to support an estimation of exclusive attribution in a way that is defensible."

3.3. Strategies for improvement

To avoid false attribution of impact both the literature review and interviews suggested using a framework of contribution rather than attribution and report on a country's overall impact (Table 6). For example, in the evaluation of CIDA's aid in Mozambique, rather than attributing particular outcomes to particular CIDA-supported interventions, CIDA assessed and reported overall country results. The Director of M&E at GAVI strongly advocated this approach:

> "Development agencies should avoid using language like Development Agency X's results are so many deaths averted. For example, if a bed net intervention in Ethiopia averts 1,000 deaths then multiple development agencies should report that this program has averted 1,000 deaths and that they made a contribution to that figure, rather than say that Development Agency X results are 1,000 deaths averted or a percentage of that impact."

Table 6. Approaches to attributing health impact to specific sources of aid, challenges, and strategies for improvement by data sources

Approaches	Literature review	Interviews	Literature review sources
1. ***Determining counterfactuals***	• Identifying a plausible counterfactual scenario of "no intervention"	• Not discussed	33,37,38,48
Methodological challenges	• Difficulties establishing plausible counterfactuals and identifying the evidence for these counterfactuals	• Not discussed	37, 38
2. ***Estimating exclusive attribution***	• Attribution of results as a proportion commensurate with the development agency's financial contribution	• Attribution of results as a proportion commensurate with the development agency's financial contribution • Avoiding counting results multiple times	57
Methodological challenges	• Not identified in the literature	• Increased pressure on health systems to generate additional information • Underestimated the role of the country's health system • Highly complex causal changes	
Strategies	• Use a framework of contribution rather than attribution	• Use a framework of contribution rather than attribution	33,56

4. Harmonising approaches to assessing and reporting the health impact of aid

Results on this theme are based solely on key informant interviews. All key informants were optimistic regarding the feasibility of harmonising approaches to assessing and reporting the impact of aid across different development agencies. They emphasized that harmonisation is worth undertaking**,** particularly to:

1. enhance comparability of impact across different agencies; 2. give credit to national health systems and encourage investments in HSS interventions; and 3. provide more transparency in assessing the impact of aid. As the Lead Advisor for Health Policy and Strategy at the WBG stated:

> "Eventually if development agencies adopt the same metrics, then this would greatly contribute to the interoperability of programs and it would make life easier for partner countries."

At the same time, they speculated that convincing development agencies to embark on this exercise would be difficult and time-consuming, especially since development agencies have complex governance systems, different time-frames and priorities, and different reporting requirements. Interviewees expressed doubts over the willingness of development agencies to use a common approach that relied on national health systems but which would not necessarily satisfy their own reporting requirements.

Key informants suggested two main approaches to harmonisation, corresponding challenges, and strategies for moving forward.

4.1. Align with national assessment and reporting mechanisms

There was strong support across key informants for aligning approaches to assessing and reporting the impact of aid with national information systems as the most ideal way to pursue harmonisation.

Challenges

Gaps in transparent mechanisms and accountability systems and fragmented poor quality information sources in partner countries would hinder the use of country-owned M&E systems by development agencies for assessing and reporting the impact of their investments. Furthermore, the lack of donor coordination and the pressure they exerted on already weakened systems by introducing their own parallel information systems were identified as another major challenge to aligning with country systems.

4.2. Health impact accounts (HIAs)

The Lead Advisor for Health Policy and Strategy at the WBG suggested using HIAs as a potential approach to harmonising assessment and reporting approaches across development agencies.

Challenges

HIAs is still under development and it requires feasibility testing in partner countries. It also requires that development agencies agree on standards for the effective functioning of an intervention; for example, an intervention such as a bed net to be effective, requires transport, distribution network, social marketing, training of health workers and families, etc. The lead Advisor for Health Policy and Strategy at the WBG explained:

> "Agreeing on what goes into the effectiveness of a certain intervention will improve the way development agencies communicate amongst each other."

Strategies for moving forward

In order to overcome challenges inherent with lack of donor coordination and willingness, key informants suggested that public health academics strongly advocate for the importance of improving and harmonising assessment and reporting approaches. The Director of the International Center for Reproductive Health distinguished main roles for academics, partner countries, and development agencies for moving this agenda forward:

> "High-level public health experts should help the donor community to move forward in the direction [of harmonisation]. Leadership should come from the Ministry of Health [in partner countries] and support should come from development agencies and they should both agree on an action plan for the coming years."

Furthermore, to test the feasibility of improved approaches, interviewees suggested targeting development agencies and partner countries that use the IHP+ M&E framework and/ or Sectorwide Approaches (SWAps), characterized as a government-led partnership with donor agencies and other groups, whereby government and donors sign up to one sectoral plan and work together on prioritising and monitoring activities. Generally, these would indicate that a coordinated approach to monitoring sector performance and a commitment to reduce multiple donor projects and programs existed in these countries. Key informants also suggested forming a collaborative group composed of academics and development agencies as well as partner countries including governments and civil society and think tanks to develop (or support) a harmonised approach to assessing and reporting the health impact of aid. This working group can then advocate for the selected approach and obtain buy-in from different stakeholders including other development agencies, partner countries, and their corresponding constituencies.

VI. Discussion

There is increasing demand by policymakers and the public in donor countries to assess the health impact of their health investments. Findings from this study indicated that development agencies such as GAVI, GFATM, DFID, and the WBG commonly used the lives saved and deaths averted metrics to fulfill accountability demands and maintain aid flow. In addition, they frequently tracked progress on mortality, morbidity, and coverage indicators to provide evidence of impact. These approaches were more commonly used to assess and communicate evidence on disease-specific interventions than on HSS interventions. In the few cases that they were used to assess HSS interventions, the indicators were mostly disease-specific. For instance, GAVI tracked immunisation indicators for assessing HSS interventions.

Findings from this study indicated that there were significant gaps in assessing the impact of HSS interventions and health system-wide impact of development aid. These gaps are paralleled by the lack of consensus on the definition of what constitutes HSS activities and expenditures [12,14]. Previous attempts to address this issue included bringing major development agencies together to define HSS activities and identify and develop a set of common indicators for tracking progress on HSS interventions [14,24]. Although these were successful first steps towards consensus, efforts to move this agenda forward have been fragmented [14].

Study findings on methodological challenges with these approaches, particularly double counting, underestimating the contribution of the health system, and overlooking system-wide effects of aid, corroborate those previously discussed in the literature [7,32]. Counting the same life saved multiple times by different development agencies was identified as a major threat to public confidence [9]. Exclusively attributing impact to disease-specific interventions supported by development agencies underestimated the essential contributions of the underlying health system to health impact, which may lead to channeling more financial support to disease-focused interventions than to HSS interventions [7,9]. While evidence emphasises that HSS and integrated funding flows are required to achieve the MDGs [6,12]. There is an urgent need to address this issue, given recent evidence of a significant shift towards vertically-oriented funding and a decline in aid for health sector development and population in recent years [3,69]. Additionally, approaches to health impact assessment did not take into account potential confounding factors such as economic shocks or natural disasters, which limit their comparability and usability for evidence-based decision making across different settings.

The expansion of disease-specific interventions supported by development aid has fuelled a debate regarding the impact of such initiatives on fragile health systems [70]. Some studies suggested that disease-specific interventions had potential adverse effects on the health system such as distorting national health priorities and diverting health workers from other

comprehensive health responsibilities and thus reducing the availability of care for other diseases [21,70-72]. In many cases, the scale-up of disease-specific interventions generated substantial benefits for the broader health system such as greater community participation [21, 72]. However, there is paucity of empirical evidence to support a negative or positive impact of disease-specific interventions on the health system [70,73]. Findings from the present study showed a dearth of documents (and approaches) that included an assessment of the interaction of aid with national health systems, especially on Governance, Health Workforce, Health Information Systems, and Supply Management Systems. As such, rigorous methods are needed to assess the interactions of disease-specific interventions with the health system and to help inform the debate on whether negative system-wide impact of aid is a substantial problem [21,73,74].

The call for improving and harmonising assessment approaches was echoed by development agencies, partner countries, and public health academics [1,7,9,14,24,71]. However, there is limited empirical evidence and consensus among key stakeholders on strategies for improving and harmonising approaches to assessing and reporting the health impact of development aid [1,7,9]. The present study distinguished two main strategies towards harmonisation of approaches, with their corresponding challenges. The first suggested approach was to align approaches to assessing and reporting the health impact of aid with national assessment and reporting mechanisms. Health impact information generated at the country level could be used by development agencies and partner countries to meet accountability demands towards their constituencies, without burdening countries with additional information requirements [9]. Furthermore, referring to country impact using a framework of contribution rather than attribution would avoid challenges of false attribution of impact to specific sources of funding. Literature indicates that this approach requires more coordinated attention and systematic investment to building country capacity, ownership, and M&E platforms [8,71]. The second approach to harmonisation is the HIAs [7]. This approach acknowledges the contributions of the health system and addresses the problem of double-counting among different sources of funding [7]. However, it is still under development and requires agreement across key stakeholders on standards for the effective functioning of an intervention, followed by further testing in partner countries. Key challenges, at least at the initial stages of this approach, include the unavailability or unreliability of national health accounts in many countries and difficulties enhancing donor transparency and tracking expenditures [7].

Strengths and limitations

This study has several strengths. An explicit inclusion and exclusion criterion that clearly document decisions for reviewing the peer-reviewed and grey literature was employed. This reduced the risk of selective sampling and therefore minimised the risk of bias in the results Furthermore, the methodology combined literature review with semi-structured key informant

interviews, which helped enhance understanding of approaches to assessing and reporting the impact of aid and allowed cross-checking of findings from the literature with those reported by key-informants. The semi-structured interviews also provided insight from key informants on challenges, enablers, and strategies to implementing improved and harmonised approaches to assessing and reporting of the health impact of aid, which were not readily available from the literature. Importantly, the semi-structured interviews helped identify potential areas of agreement across different groups of respondents, which could be built on when designing and developing strategies for harmonisation.

Several limitations of this study are acknowledged. The study did not address the indirect health impact of the broader determinants of health and the global factors that can influence those determinants. On the other hand, focusing on the health system helped put boundaries around this complex construct and allowed the identification of more specific health impact measures [14,25]. Another limitation was that documents that assessed the health system impact (and not health status impact) might not have been captured in the literature review. The focus of the literature review was on documents that included foremost measures of health status impact assessment. As such, results describing approaches to assessing the interactions of development aid with the health system should be interpreted with caution. Although this analysis was a necessary first step towards examining how approaches to assessing and reporting the health impact of aid can include an assessment of the impact of aid on the health system, it was not sufficient by itself. The small sample size of interviewees and the absence of policymakers from donor countries from the sample might have limited the generalisability of findings to all stakeholders. However, since participants worked at high-level positions for more than three years, it could be safely assumed that they were well-informed on assessment and reporting approaches, challenges, enablers, and strategies for improved and harmonised approaches to assessing and reporting the health impact of aid. Also, due to time constraints, websites of four development agencies were reviewed. Nevertheless, these were among the major sources of development aid for health and represented bilateral and multi-lateral channels of development aid [17]. Furthermore, relevant documents on developing approaches to assessing health impact prior to launching the MDGs and prior to 2007 might have been missed due to the search strategy and selection criteria. However, the review captured the essential elements and provided a range of examples to illustrate them. Additionally, responses from key informants confirmed and complemented the literature review.

Recommendations for action and future research

In light of findings from this study, recommendations for action include testing and adapting the different approaches to the assessment and reporting of health impacts of aid with interested partners to examine their feasibility in local settings and the readiness of stakeholders

to use them. Engaging recipient countries early on, especially countries which coordinated development aid processes through SWAps and / or IHP+ country compacts.

Findings from this study can be shared with development agencies, partner countries, and academics for establishing a collaborative group to develop (or support) and test a common improved approach to assessing and reporting the health impact of aid. It is recommended that this group include broad area of expertise such as health policy and systems research, health metrics, public health program evaluation, health surveys and surveillance, health information systems, in addition to program implementers and political science academics. Bringing stakeholders together would help build on existing assessment activities and initiatives and achieve agreement on approaches for assessment and reporting of health impacts of aid in compliance with the Paris Declaration and the Accra Agenda for Action. Academic networks, including EAGHA, can play a major role by creating a platform for fostering collaborative work with different stakeholders and advocating for implementing improved approaches to assessment and reporting.

This study provided an initial review of approaches to assessing and reporting the health impact of aid, their challenges and strategies for moving forward, which can in the future be extended to other major sources of development aid for health such as the United States Agency for International Development and the Bill and Melinda Gates Foundation, etc. This would provide a more comprehensive picture of practices and strategies for improvement and harmonisation and would help pave the way for a collaborative work involving these major stakeholders. Additionally, future research should also examine practices of low, middle and high- income countries in assessing the performance of health systems, which would help inform recommendations on building M&E platforms at the partner country level. Furthermore, as the health status of countries depends on broader factors outside health, future research can explore approaches that take into account the indirect health impact of these factors, such as education, income, and household environment.

VII. Conclusion

A more systematic and harmonised approach to assessing and reporting the health impact of aid poses methodological challenges but has the potential to enhance comparability across different agencies, give credit to national health systems, encourage investments in HSS interventions, and provide more transparency in assessing the impact of aid. Experts, development agencies, and partner countries should collaborate for developing and advocating an improved and harmonised approach. Advancing this agenda is critical, given the growing recognition of the importance of HSS interventions for achieving the MDGs, and recent trends for a shift towards disease-specific funding and a decline in funding to health sector development.

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Annex 1. Semi-structured interview questions

1. You have been working in this position for _____ years.

2. What are the **main approaches to the assessment and reporting** of the health impact of aid that you use in your organization? What are the main advantages and disadvantages of these approaches?

3. Do you agree with the principles outlined in **Box 1** for the assessment and reporting of the health impact of aid**?** What changes would you suggest to these principles?

4. How can current approaches to the assessment of the health impact of aid better reflect the impact of aid on the performance of the national health system?

5. What are the main **methodological challenges** to the **application** of these principles in the assessment and reporting of the health impact of aid (such as double counting)? How can these challenges be overcome?

6. What are the main **institutional challenges** to the **application** of these principles in the assessment and reporting of the health impact of aid (such as limited capacity in development agencies or partner countries)? How can these challenges be overcome?

7. What are **existing enablers** to the application of these principles in the assessment and reporting of the health impact of aid (such as existing good quality data)?

8. What are the main **challenges** to the **harmonization** of approaches to the assessment and reporting of the health impact of aid? How can these challenges be overcome?

9. How can the agendas of partner countries and donors around the assessment and reporting of the health impact of aid be better **integrated**?

10. What are the **next steps** towards the **harmonization** of approaches to the assessment and reporting of health impact of development aid?

***** This is the version of questions sent to participants. However, following advice from experts in qualitative methods, the interviewer made sure to:
1. Introduce broad issues for discussion first: approaches to assessment, challenges to improving approaches (if any), the potential for harmonising approaches, and strategies to move forward; 2. Keep questions open and only provide examples when respondents did not understand the question, so as to minimise bias; and 3. Ask if there are any additional comments or issues interviewees would like to discuss.

Annex 2. Letter of participation

Dear Madam/ Sir,

We would like to request your participation in an interview as part of a follow up study on the workshop "Towards shared principles for assessment and reporting the health impacts of development aid" held on February 6th in Brussels. The objective of the interview is to elicit the views of key stakeholders on the challenges and enablers to the application of the shared principles for the assessment and reporting of health impact of aid (**Box 1**) and to the harmonisation of approaches to the assessment and reporting of health impacts of aid.

The interview will require about 30 minutes over the phone. With your consent, responses will be recorded by tape or by extensive note-taking, whichever you prefer. Please notify the interviewer if you do not wish to be quoted in any reports. All the information that you provide will be treated in the strictest confidence. All names will be coded and only code numbers will be used on interview transcripts. You can also choose to discontinue your participation at any time*.

Box 1. Shared principles for the assessment and reporting of health impact of aid

At the consultative workshop held in Brussels February 2012, a set of shared principles for the assessment and reporting of health impact of aid were proposed. The main principles are:

Centrality of countries

Assessment and reporting of aid impacts should:

- respond to country needs and support strengthening of national heath systems for improved performance
- focus on strengthening country ownership, building capacity, and supporting sustainability
- build upon country-owned monitoring and evaluation platforms
- contribute to strengthening national health strategies and existing review mechanisms, without overloading countries.

Health impact of aid is the product of a mix of causes

Assessment and reporting to aid should:

- identify the contextual factors that contribute to the observed results, to enable a better understanding of changes underpinning how development aid works and to capture the wider contributions of the health system.

At the same time, approaches should be

- timely and compelling to non-expert policymakers and the public in donor and partner countries.

Please do not hesitate to contact us for any additional information.

Andy Haines, Chair of EAGHA, Professor of Public Health and Primary Care, London School of Hygiene and Tropical Medicine	Nour Ataya, Intern-EAGHA, MPH candidate-EHESP

* Interviewees were previously targeted via email: "In follow up to the workshop held in Brussels on February 6th, and as part of my MPH project for EHESP, I will be interviewing key stakeholders to explore how best to move forward on developing shared approaches to the assessment of the health impact of aid. I would be grateful if I could interview you at some point over the next couple of weeks for around 30 minutes. If you are in agreement in principle I will send a brief outline of the questions in advance but please feel free to suggest issues you think are important."

Annex 3. Example of a verbatim transcript

1. You have been working in this position for **3.5** years.

2. What are the main approaches to the assessment and reporting of the health impact of aid that you use in your organization?

- [GAVI] follows the IHP M&E Framework and a mutual contribution approach.

- For impact numbers we use particularly the deaths averted in relation to our vaccine support, and because we support national programs it refers to the total impact of those programs, but we have a messaging framework around that (which) should place that progress in context.

- Sometimes communication messages take on a life of their own and the fine print often goes around and nuanced interpretations of the number is sometimes lost when the messages are summarized or when they are transmitted down the chain several iterations of transmission or when they are interpreted by audiences in a certain way.

- [GAVI] essentially uses effective coverage and peer-reviewed models to estimate the impact of vaccination, referred to as a contribution that we have made to a country impact. For example, Ethiopia introduced a new pneumococcal vaccine with [GAVI] support, so [we] will estimate the effective coverage reached of pneumococcal vaccine then [GAVI] uses a peer-reviewed model to estimate the number of deaths averted associated by that national vaccination program, in the case of pneumococcal vaccine [we] use the Tri-Vac model developed by the London School of Hygiene and Tropical Medicine, and then [we] refer to that in [our] communication materials. If the national vaccination program has averted 1,000 deaths and if [we] determine that 75% effective coverage was reached, this it is used as input into the model and then the model estimates 1,000 deaths averted as a result of pneumococcal vaccine in Ethiopia for a period of time and [we] will report this figure.

- [We] usually do not report [deaths averted figures] on a county-by-country basis, though sometimes [we] do. [We] usually use the aggregate form across a set of countries.

2. In your opinion, what are the advantages and disadvantages of this method?

- In the debate of contribution versus attribution, in many ways trying to estimate exclusive attribution, [that is] trying to estimate some agency's impact in terms of exclusive attribution is [very difficult] because causal changes are highly complex and the impact is a joint product of many country's vaccination activities. There is a whole series of necessary and sufficient causes on their own that have to be in place for an impact to be produced, so if you try and attribute that impact or a fraction of that impact to one of these causes, it will logically fall apart. It is not like one of those factors in itself is independently producing some fractional impact that considers to a total. [The impact] is actually caused by the interplay between lots of different factors together that produces that impact.

- I am just not confident that if one where to say, let us start with country's impact but then we should analyze that [impact] and try to break it down into the attribution of different funding agencies, that [this can be done] on any reasonable basis that would be defensible.

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- The causal pathways are too complex to support an estimation of exclusive attribution in a way that is defensible. This is something important to understand.

3. Is there a way around double- counting?

- If [a development agency] is referring to country impact then [most probably] there is no double-counting because it is a country's impact. If Ethiopia has altogether across all interventions in a year has averted so many deaths then there is no double-counting. Let us say that if a bed net intervention in Ethiopia is averting 1,000 deaths and [development agency X] reports that and another reports that, it is not that problematic if they are both referring to country impact. If [a development agency] is saying that this program averted 1,000 deaths and that they made a proportion contribution to that [impact], it is a totally defensible statement and not double-counting.

- Where [development agencies] get in trouble is if they are using language like "[development agency X]"- so development agency X's results are 1,000 deaths averted and WB results are 1,000 deaths averted then there would be a double-counting situation, but through a framework of contribution rather than attribution we actually avoid that problem.

4. To recap, it is the way the results are presented rather than the methods that are used to report the results.

- Exactly, by putting the country in the driver's seat and recognizing the country's ownership to the impact.

- [The contribution framework mentioned above] is much more conceptually defensible than breaking apart the country's impact and allocating it to others, [such as taking] Ethiopia's 1,000 deaths averted from a bed net intervention and reallocate 40% of that to the GF, 30% of that to the WB, 20% of that to DFID, 10% of that to USAID etc… it is like taking a country's impact and breaking it apart and giving pieces of that to external agencies, [while] it is the country's own health system, and the country's health workers, and infrastructure to deliver that, country's population, all the demand- side factors, all the population characteristics, etc… [that has lead to the impact].

5. Do you agree with the principles outlined in Box 1 for the assessment and reporting of the health impact of aid? What changes would you suggest to these principles?

Fully supportive of the principles proposed in Box 1.

6. How can current approaches to the assessment of the health impact of aid better reflect the impact of aid on the performance of the national health system?

- There are many ways to do it. The simple deaths averted metric may not be the necessary way to do it. There is a lot of analytical work and a lot of communication that needs to be done to reflect the importance of health systems.

- I would love to be proven wrong about this, but I am sure that yet to be made to understand how just reporting something like number of deaths averted or number of DALY's averted will appropriately advance and support an agenda that places a central emphasis on health systems.

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- There is a need to understand what led to the observed changes in impact indicators. This is critically important analytical work and that needs be communicated very carefully. It is not easy, because a lot of audiences especially donors and politicians do not want complexity.

- Health systems are fundamentally complex at their core almost by definition, and a lot of donors and policymakers who want quick sound bites just do not want to, or are not able to, or are not served by making their short messages overly complex.

- Health systems are so critically important, I am just not sure that we will advance the health systems agenda through any way of reporting number of deaths averted, since we are just reporting the objective change in an impact indicator, we are not commenting on the complex set of factors that are part of the causal pathway that led to that decline. That is a separate piece of work that needs to be [undertaken] very carefully and that definitely needs to be communicated in an appropriate way, but that in itself is not going to turn into sound bites that politicians like because fundamentally they want things to sound easy and there is no way that we can talk about systems in a meaningful way without introducing concepts of complexity.

7. Is this a challenge to developing methods that reflect the health system?

- I think so. Somehow a lot of it has to do with improving health systems research methods. As a global community, we need to be able to do a better job at measuring results at the country level.

- Modeling is appropriate and useful but we cannot rely on models alone, we have to get smart about how we do direct real world measurements, outcomes to help inform our understanding of the estimates of the impacts achieved but also to understand the complex causal pathways that lead to those results. I think that by making progress in that agenda and communicating that convincingly to others that will put health systems to the fore. In a way that will make people understand that you cannot just helicopter a bunch of bed nets into an area with a high burden of disease to Malaria and then expect that lives will be saved, we need systems to deliver those- [to achieve] high coverage and high equity and sufficiency in a way which is suited to the demands and interests of the population and in a way that ensures public social financial risk protection and so forth.

- An agenda is to be advanced through that type of analytical work, [it would include] direct real world measurements, good evaluation and analytical work, and careful communication of complexity and complex causal pathways.

8. What are existing enablers to the application of these principles in the assessment and reporting of the health impact of aid?

- Refer to presentation in Brussels for approach to the country evaluation that [we] are trying to roll-out.

- I do not want to say that somehow what we are doing is the most important one or whatever, it is just one approach and of course there are others as well.

- There is kind of activity where there is serious long-term investments in careful evaluation work in a forward- looking way and responsiveness to context with appropriate and due attention to complexity. This is part of the solution and it has to come with an agenda that

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places a lot of emphasis on capacity strengthening and systems strengthening and development and partnership.

- [Development agencies] should be working in partnership with governments and civil society and institutions with appropriate competencies, skills, and capacity at country level. That would be a big part of the solution.

8. Do you think there is a possibility or feasibility to harmonize the assessment approaches across different development agencies?

- There is potential for [harmonization of approaches to assessment and reporting of the health impact of aid].

- One really good way to do that would be through more joint evaluation activities. For example, we would like to roll-out its evaluation approach with other partners, as well as to build upon what [others] were presenting- IHP work and the M&E platform work that WHO is working on.

- There should be a national led M&E platform that development partners should be contributing to strengthening rather than developing parallel systems. Partners should try to [implement evaluation] in a country-owned way, where the country itself owns the platform that partners support and [development agencies] can contribute to strengthening country ownership and long-term country capacities, while at the same time doing really good evaluation work that is very context-specific and has a lot of depth to it.

- Partnering with countries to actually collect the data and do evaluation activities at the country- level will put [development agencies] in a better position to report in a more harmonized way on impact.

- If we are all doing our own separate monitoring exercises and we are all flying in our consultants separately and following different methodologies that are separate from country systems, we will continue to report separately as well, because the approach that we followed will not be directly comparable, because the questions that we were asking, the counterfactuals that we were using, the assumptions that we adopted will not be directly comparable.

- Linking this up at the level of joint country evaluations on a national M&E platform is a very important part of the solution.

9. Do you perceive any challenges to harmonization?

- [Harmonization] is very challenging. We (WHO, GF, WB, etc…) have been talking about doing full- country evaluations for about two years now.

- It is very time consuming and it does have the potential to be rather slow- evolving because it takes time to get [other development agencies involved].

- Overall, a lot of agencies that work in global health (GH) are not that simple. GH agencies tend to have complex governance systems and different time-frames, and different priorities.

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- It is not that easy to get people aligned on it, but it is absolutely worth- doing. It is challenging and it does require a lot of patience and a lot of communication and persuasion. We have to convince donors and governance bodies that make decisions about budget allocations that it is really important to 1. invest in appropriate evaluation and 2. have the agents to do it in such a way that we bring countries and partners together in a harmonized way.

10. How can the agendas of partner countries and donors around the assessment and reporting of the health impact of aid be better integrated?

- [The proposed solution] is not a magic bullet. It is a difficult and long-term process, but it is critically important that we do what we can to advance that agenda so that we are in a better place [in the future] from where we are now.

11. The next steps that you propose to achieve harmonization is basically communicating with different countries and partners and trying to persuade them and engage them?

I think so, pursuing joint evaluation work between agencies at the country level and in a way to build upon country- owned M&E platforms. In summary, it is that.

Any additional comments?

- Brussels meeting was very good. I really liked the principles in Box 1. Nicely laid out and I strongly agree with them. I think that these are the important points- balanced.

- I am happy to be engaged as the discussion moves forward and happy to stay in touch; and perhaps [we] can contribute where we can.

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Annex 4. Literature review flow chart

Guidelines for developing this chart were adapted from Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) [69]

Annex 5. Results on approaches to assessing the interactions of aid with the health system from literature review

Factors that affect the impact of the interaction of aid with the health system	Approach	Description and uses	Challenges	N(%)*	Sources
1. Finance					
Amount and stability of funding	• Resources mobilised for support of targeted interventions to meet country demand and increases in government budgets for target services	• Interviews, document review and country studies are used to assess these measures	• Limited depth of information about contextual factors • The retrospective nature of assessment • Difficulties in attributing impact to specific sources of funding	12(33.3)	34,35,36,37,38,39,41,42,43,44,48,60
Relative size of domestic budget allocations for health versus external support	• National Health Expenditure (THE), share of the government to THE, average amount spent from national health budgets on target services, proportion of countries that meet their co-financing commitments in a timely manner, • Fungibility Risk: A risk that donor support will substitute national spending	• Interviews, document review and country studies are used to assess these measures	• Limited depth of information about contextual factors • Retrospective nature of assessment • Difficulties in attributing impact to specific sources of funding	12(33.3)	34,35,36,37,38,39,41,42,43,44,48, 56
Aid effectiveness (harmonisation, alignment, results, accountability, ownership)	• Use of programme- based approaches, Extent to which the funding application is country driven, use of country procurement systems, results orientation and M&E, accountability of grants	• These measures were assessed through interviews, country studies, surveys, and OECD indicators	• Limited depth of information about contextual factors • Retrospective nature of assessment	6(16.7)	35,37,38,39,40,53

Factors that affect the impact of the interaction of aid with the health system	Approach	Description and uses	Challenges	N(%)*	Sources
Sustainability	• Security of supply, fulfilment of co-financing commitments	• These measures are assessed through interviews, document review, and country studies	• Limited depth of information about contextual factors in some studies • Retrospective nature of the assessment • Sustainability can be truly tested only after funding ends	7(19.4)	34,35,36,37,38,39,41
Predictability	• Resources mobilised to finance country demand	• Proportion of funding being noted as 'secure • These measures are assessed through interviews, document review, and country studies	• Limited depth of information on contextual factors • Retrospective nature of the assessment	4(11.1)	37,38,39,41
2. Health workforce					
Production, retention and strengthening performance	• Person-episodes of training, health worker density, percentage of facility staff trained in target services and non-target services	• These measures are assessed by country visits and facility census	• Country visits may provide anecdotal information that may not be prevalent across all countries	12(33.3)	38,47,48,55,59,60,62,63,64,65,66,67
3. Health information systems					
Availability and accuracy of good-quality information to assess trends in health and the performance of the health system	• Improving data reliability and reporting in countries	• These measures are assessed through interviews, document review, and country studies	• Limited depth of information on contextual factors in some studies • Retrospective nature of the assessment	1(2.8)	37
4. Supply management systems					
Procurement and distribution	• Availability of essential medicines and technologies	• This measure is assessed through facility assessments	• None mentioned	1(2.8)	48
5. Delivery of health services					

Factors that affect the impact of the interaction of aid with the health system	Approach	Description and uses	Challenges	N(%)*	Sources
Access or coverage	• Coverage rates for key interventions	• Direct measurement of coverage rates and qualitative methods (e.g. document review, interviews and interviews and focus groups with stakeholders) were used to measure coverage • Modelling was used to estimate coverage rates that are attributable to specific sources of aid	• Limited depth of information about contextual factors • Retrospective nature of assessment • Difficulties in attributing impact to specific sources of funding	29(80.6)	33,34,35,36,37,38,39,40,44,47, 48,51,52,53,54,55,56,57,58,59, 60,61,62,63,64,65,66,66,68
Equity in services	• Equity in coverage of key target and non- target interventions	• These are measured using surveys and modelling • Disparities in equity of coverage was measured based on urban/rural residence, gender, mother's education, birth order, and asset indices	• Limited depth of information about contextual factors • Retrospective nature of assessment	11(30.6)	35,36,37,38,39,44,47,48,50,53, 58
Service quality	• Treatment success rates, readiness of health services, adherence to international guidelines for treating communicable diseases	• These are measured through surveys and facility assessment	• Short evaluation timeframe • Costs of collecting appropriate data at the national level	5(13.9)	48,53,57,65,68
6. Governance				0	

* N refers to the number of documents that addressed components of interaction with the health system. Percentages are calculated out of a total of 36 documents that met criteria.