



Review article

Effects of donor proliferation in development aid for health on health program performance: A conceptual framework

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ABSTRACT

Development aid for health increased dramatically during the past two decades, raising concerns about inefficiency and lack of coherence among the growing number of global health donors. However, we lack a framework for how donor proliferation affects health program performance to inform theory-based evaluation of aid effectiveness policies. A review of academic and gray literature was conducted. Data were extracted from the literature sample on study design and evidence for hypothesized effects of donor proliferation on health program performance, which were iteratively grouped into categories and mapped into a new conceptual framework. In the framework, increases in the number of donors are hypothesized to increase inter-donor competition, transaction costs, donor poaching of recipient staff, recipient control over aid, and donor fragmentation, and to decrease donors' sense of accountability for overall development outcomes. There is mixed evidence on whether donor proliferation increases or decreases aid volume. These primary effects in turn affect donor innovation, information hoarding, and aid disbursement volatility, as well as recipient country health budget levels, human resource capacity, and corruption, and the determinants of health program performance. The net effect of donor proliferation on health will vary depending on the magnitude of the framework's competing effects in specific country settings. The conceptual framework provides a foundation for improving design of aid effectiveness practices to mitigate negative effects from donor proliferation while preserving its potential benefits.

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1. Introduction

Over the past decade, an international policy consensus around aid effectiveness principles has been applied to development assistance for health (Dodd and Hill, 2007; Lane and Glassman, 2007; Working Party on Aid Effectiveness, 2011; Dodd et al., 2007). These aid effectiveness principles include harmonization among donors, donor alignment with recipient country systems, recipient country ownership of the development agenda, results-oriented aid management, and mutual accountability between donors and recipient countries, which were endorsed through a series of high-level fora convened by the Organisation for Economic Co-Operation and Development to improve the management and impact of development aid generally (Organisation for Economic

Co-operation and Development, 2003; Organisation for Economic Co-operation and Development, 2008a; Organisation for Economic Co-operation and Development, 2011a). These principles, codified in the 2005 Paris Declaration on Aid Effectiveness, built on earlier aid coordination and aid effectiveness practices such as Sector Wide Approaches (SWAps) (Buse and Walt, 1997; Walt, Pavignani, Gilson, Buse; Easterly, 2007; Paul et al., 2013; Sweeney et al., 2014a). Application of these principles was intended to address a variety of challenges in aid delivery (e.g., inefficient and duplicative implementation of activities, limited sustainability of aid-funded interventions) and produce a complex range of policy and practice changes (e.g., increased coherence of aid-funded interventions, greater attention to overall development results rather than performance of specific donor-funded projects); however, the exact causal mechanisms for achieving these results were not clearly specified in the international agreements formalizing the principles (Rogerson, 2005; Lawson, 2009; Paul and Vandeninden, 2012). A number of studies have examined implementation of aid effectiveness principles in the health sector, highlighting that results

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should only be expected if the principles have in fact been implemented and accompanied by requisite changes in donor and recipient country behavior, as well as the potential for unintended consequences (Working Party on Aid Effectiveness, 2011; Paul et al., 2013; Sweeney et al., 2014a; Duran and Glassman, 2012; Paul et al., 2014; Sweeney et al., 2014b); however, any theory of change and theory-based evaluation must start from a clear understanding of the problems that aid effectiveness principles are intended to mitigate (White, 2009; Birckmayer and Weiss, 2000; Schmitt and Beach, 2015).

One notable problem that aid effectiveness principles were intended to help solve was the perceived increase in transaction costs caused by the growing number of development aid actors and the use of stand-alone project-based financing approaches, which could divert scarce recipient country resources from development program implementation to donor project management (Rogerson, 2005; Lawson, 2009; Paul and Vandeninden, 2012; Easterly, 2002; Eyben, 2007; Acharya et al., 2006; Balogun, 2005). The conventional wisdom was that increases in the number of donors (i.e., donor proliferation) would increase transaction costs for the recipient country government when each donor imposed different requirements (e.g., reporting frequencies and indicators, in-country missions, procurement regulations) that took the recipient government's time away from policy and program management, thereby making aid less efficient at producing development results (Rogerson, 2005; Lawson, 2009). These increased transaction costs for the recipient government could be avoided if donors harmonized their requirements with each other and aligned with recipient country systems and priorities in response to country ownership.

Other literature, however, has raised questions about exactly which interactions between donors and recipients should be considered unproductive transaction costs rather than essential production costs of development programs, the feasibility of measuring transaction costs, and the possibility that applying aid effectiveness principles could increase transaction costs (Rogerson, 2005; Lawson, 2009; Paul and Vandeninden, 2012; Dyer, 2005; Watt, 2005). In addition, the economic theories of contracts and market competition that often underlie models of development aid would suggest that donor proliferation (i.e., increasing the number of suppliers of aid) and diversity in donor approaches (i.e., innovation and differentiation in price and quality) may bring benefits for the recipient country (i.e., the consumer of aid), and that these benefits may be attenuated by some types of aid coordination efforts (e.g., harmonization approaches which strengthen donors' collective bargaining power relative to the recipient country government). (Rogerson, 2005; Easterly, 2002; Eyben, 2007; Acharya et al., 2006; Gibson et al., 2005; Knack and Rahman, 2007).

Given these competing claims, it is important to clarify the conditions under which donor proliferation's consequences are problematic before assessing whether aid effectiveness principles are remedying any such consequences. There is currently no conceptual framework that enables comparison and synthesis of the different hypothesized effects of donor proliferation on development outcomes. Such a conceptual framework is a necessary foundation both for empirical research on donor proliferation's effects per se and for developing a more detailed theory of change for the results we should expect from applications of the aid effectiveness agenda.

This type of conceptual framework is especially important in a complex sector such as health that has experienced substantial recent donor proliferation, and in which the evidence for aid's effect on health outcomes is mixed (Working Party on Aid Effectiveness, 2011; Duran and Glassman, 2012; Lu et al., 2010; Mishra and Newhouse, 2009; Nunnenkamp and Öhler, 2011;

Sachs, 2005; Levine, 2004; Williamson, 2008; Wilson, 2011; Valentine et al., 2015; Institute for Health Metrics and Evaluation (IHME), 2016). At global level, the estimated number of bilateral and multilateral donors providing official development assistance for health increased from 26 to 50 between 2002 and 2013 (Valentine et al., 2015). At country level, between 1995 and 2010, the average net number of donors providing health sector aid increased from four to 14, based on data from the OECD's Creditor Reporting System for general and basic health, population and reproductive health, or water and sanitation aid across all 155 countries that were reported to have received such aid; 82 countries gained 10 or more health-related aid donors and four countries gained 20 or more health-related aid donors (Organisation for Economic Co-operation and Development, 2011b). The Creditor Reporting System does not include important non-OECD donor governments (e.g., China) or private sector donors, and is therefore an underestimate of the true extent of donor proliferation (Duran and Glassman, 2012). Many bilateral donors have multiple government agencies disbursing health sector aid, further increasing the number of distinct donor organizations with which recipient countries interact (Duran and Glassman, 2012; Valentine et al., 2015). This increase reflects the creation of new health-focused donor organizations (e.g., the Global Fund to Fight AIDS, Tuberculosis, and Malaria), and the entry of traditional bilateral and multilateral donors into the health sector in a wider range of aid-recipient countries (Dodd and Hill, 2007; Lane and Glassman, 2007; Ravishankar et al., 2009; McCoy et al., 2009; World Health Organization, 2012; Organisation for Economic Co-operation and Development, 2011b; Duran and Glassman, 2012; Institute for Health Metrics and Evaluation (IHME), 2016). Due to its increasing number of actors and complexity, the health sector was chosen by the OECD as a tracer sector for implementation of the aid effectiveness agenda (Working Party on Aid Effectiveness, 2011).

Accordingly, this study sought to identify hypotheses about donor proliferation's effects from previous literature, integrate them into a conceptual framework of donor proliferation's effects on health program performance, and document the degree of evidence available for each hypothesized effect. This conceptual framework can help inform future research and theory-based evaluation efforts around health aid effectiveness in low- and middle-income countries.

2. Materials and methods

A literature review was conducted to identify hypotheses about how donor proliferation – defined as an increase in the number of organizations providing development aid – affects development outcomes in general and health program performance in particular. Searches for academic literature were conducted in MEDLINE, JSTOR, EconLit, and Google Scholar (Supplemental Fig. 1). In addition, web sites of international health and development organizations (Organisation for Economic Co-Operation and Development, World Bank, World Health Organization, Center for Global Development, Overseas Development Institute, Kaiser Family Foundation, Institute for Health Metrics and Evaluation) were searched to identify relevant gray literature. Search terms used were development, aid, health, global health, donor, recipient, harmonization, alignment, ownership, control, international cooperation, and economic development. These broad search terms were used to capture literature covering a range of specific aid effectiveness practices (e.g., sector-wide approaches (SWAPs), budget support, development partner coordination committees). Search results were excluded if the source did not address development aid as its primary topic based on abstract or full text review. Hand searches of references from the retained search results were conducted to

identify additional literature on the study question. Data were extracted from the full text of the final literature sample about the study methods used, the claims made about the effects of donor proliferation on development outcomes generally and on health program performance specifically, and the type of evidence provided for these claims. The literature search was not conducted as an exhaustive systematic review but rather as a first step in identifying hypotheses about how donor proliferation affects health program performance to build a conceptual framework that could inform future systematic reviews and empirical testing. Although the primary objective of the review was to identify and organize the hypotheses about donor proliferation's effects per se, the literature reviewed also yielded insights into the causes of and responses to donor proliferation, which were incorporated into the conceptual framework in general terms to emphasize that donor proliferation does not occur in a vacuum.

The hypothesized effects of donor proliferation identified from the literature review were grouped into three types of concepts: (i) primary effects of donor proliferation, which were factors that changed as an immediate result of increases in the number of donors, (ii) secondary effects, which were factors that changed as a result of the primary effects, and (iii) recipient conditions, which were conceptualized as endowments or features of the recipient country government (or, more generally, conditions of the aid-recipient organization or country). Drawing on definitions of health care and health system performance, the endpoint of health program performance was defined as comprising a health program's quality, efficiency, accessibility, coverage, and utilization, equity, and participant satisfaction, with improvements in any of these constituent domains indicating better health program performance (Roberts et al., 2008; Peters et al., 2009; De Savigny and Adam, 2009; Institute of Medicine, 2001). A health program was defined as a set of planned activities undertaken for the purpose of preventing death and disease and/or improving physical, mental, and/or emotional well-being, which could range from a narrower disease-specific program to a broader sector-wide program or plan. Health program performance was considered as an "output" or "intermediate outcome" that could be measured by a variety of health service delivery indicators (e.g., immunization coverage), with better program performance assumed to improve ultimate population health outcomes (e.g., mortality rates).

To link the three types of concepts identified from previous literature to the endpoint of health program performance, we proposed a set of three intermediate performance determinants: (i) the choice set, (ii) the quality of the choice, and (iii) the quality of implementation of the choice. The choice set was defined as the set of policies, structures, processes, and interventions for strengthening the health system, health service delivery and/or health promotion that are known, available, and feasible for the aid recipient. This definition is intended to include health system strengthening activities as well as disease prevention and public health activities and therapeutic health care activities for specific health conditions (Paul et al., 2013; World Health Organization Maximizing Positive Synergies Collaborative Group, 2009). Choice quality was defined as the strength of the evidence that the chosen policy, structure, process, or intervention will improve health program performance and health outcomes, and the degree to which the choice contributes to coherence and efficiency at a health system level (Paul et al., 2013). The implementation quality of the choice was defined as the fidelity, completeness, and efficiency with which the chosen policy, structure, process, or intervention was implemented. Taking an episode of donor proliferation in health sector aid as a starting point, the primary effects, secondary effects, and recipient conditions identified from previous literature were then mapped to the intermediate performance determinants

of health program performance and population health outcomes.

To reflect the complex adaptive nature of health systems and development aid delivery, (Paul et al., 2013; De Savigny and Adam, 2009), these individual effect pathways were situated within the broader environment in which donor proliferation occurs by incorporating feedback effects from health program implementation and performance, direct and indirect effects of aid effectiveness practices, and the influence of contextual factors into the framework. Aid effectiveness practices were defined as structures, processes, and behaviors by aid donors, aid-recipient country governments, and aid-recipient organizations intended to streamline and increase the impact of aid, such as Sector-Wide Approaches (SWAPs), budget support, and applications of Paris Declaration aid effectiveness principles, which may be adopted in response to donor proliferation. Contextual factors were defined as including political, economic, epidemiological, social, cultural, and technological conditions at global, country, and sector levels.

3. Results

3.1. Primary effects of donor proliferation

The literature review identified eight primary effects of donor proliferation (Table 1). The first two effects are competing predictions about the volume of aid; there is some evidence that having more donors will increase total aid (Dyer, 2005; Clemens, 2005; Dodd and Olivé, 2011; Buse, 1999), but other evidence that bilateral donors reduce their aid to countries with more donors (Balogun, 2005; Chong and Gradstein, 2008). Third, donor proliferation may increase competition among donors for favor with the recipient country government, credit for development successes, and in-country resources (Rogerson, 2005; Acharya et al., 2006; Watt, 2005; Knack and Rahman, 2007; Buse, 1999; Djankov et al., 2009; Moore, 1992), although some literature argues that donors act non-competitively as a cartel in negotiations with the recipient country government (Easterly, 2002; Eyben, 2007). Fourth, increases in the number of donors are hypothesized to increase the recipient organization's control over aid, defined as the ability of the recipient organization to align the features of the aid package with its preferences, i.e., to secure more favorable terms for aid (Rogerson, 2005; Gibson et al., 2005; Clemens, 2005; Buse, 1999; O'Connell and Soludo, 2001; Woll, 2008; Kotoglou et al., 2008). For example, if there are more donors in a country, a recipient country's Ministry of Health may be able to bargain with different donors to obtain more favorable terms around procurement requirements, technical activities supported, or geographic region of investment. Donor proliferation may increase recipient control even if a new donor brings only targeted funding for a specific health issue, as this donor expands the recipient's options for financing its activities around that health issue and thus increases the recipient's negotiating power with donors in that and other issue areas. Recipient control is related to the issue of aid fungibility, i.e., the ability of aid to be used flexibly or for purposes other than those originally intended, which may magnify the effects of donor proliferation on recipient control. For example, donor proliferation may increase recipient control more when aid is fungible and less when aid is not fungible. Whereas aid fungibility debates often focus on the technical activities, locations, or goods and services to be supported by aid, recipient control may also be exercised over dimensions of aid management (such as procedures for disbursement, procurement, and reporting) that typically fall outside of aid fungibility discussions. Fifth, as the number of donors increase, donors may poach staff from the recipient country government to work in donor organization offices and aid-funded projects, or otherwise distort recipient country government

Table 1
Primary effects of donor proliferation in health sector aid.

| Primary Effect of Donor Proliferation | Type of evidence presented for primary effect | | | | Health sector evidence? |
|--|--|--|---|--|-------------------------|
| | Conjecture, Model, or Anecdotal Evidence only | Qualitative (case study, interviews, some surveys) | Quantitative (descriptive quantification) | Quantitative (causal inference/statistical test) | |
| Increases Aid Volume | Clemens (2005) | Dyer (2005); Dodd and Olivé (2011); Buse (1999) | | | Yes |
| Decreases Aid Volume | Balogun (2005) | | | Chong and Gradstein (2008) | No |
| Increases Inter-Donor Competition | Rogerson (2005); Acharya et al. (2006); Knack and Rahman (2007); Djankov et al. (2009); cf. Easterly (2002); Eyben (2007) | Watt (2005); Buse (1999); Moore (1992) | | | Yes |
| Increases Recipient Control over Aid (in the absence of donor harmonization) | Rogerson (2005); Gibson et al. (2005); Clemens (2005); O'Connell and Soludo (2001) | Gibson et al. (2005); Buse (1999); Woll (2008); Kotoglou et al. (2008) | | | Yes |
| Increases Donor Poaching of Recipient Government Staff (includes orienting government staff towards donor priorities and distorting retention incentives) | Acharya et al. (2006); Knack and Rahman (2007); Djankov et al. (2009) | Dyer (2005); Dodd and Olivé (2011); Kotoglou et al. (2008) | | | No |
| Increases Transaction Costs and Parallel Systems | Organisation for Economic Co-operation and Development (2003); Organisation for Economic Co-operation and Development (2008a); Rogerson (2005); Paul and Vandeninden (2012); Easterly (2002); Eyben (2007); Acharya et al. (2006); Balogun (2005); Djankov et al. (2009); Burall et al. (2006); Organisation for Economic Co-operation and Development (2008b) | Balogun (2005); Dyer (2005); Watt (2005), Buse (1999); Kotoglou et al. (2008); Brown et al. (2000); Manning and Reveyard (2003); Sundewall et al. (2010) | Acharya et al. (2006); Watt (2005); O'Connell and Soludo (2001); Brown et al. (2000); Manning and Reveyard (2003) | | Yes |
| Decreases Donor Accountability for Overall Outcomes | Easterly, 2002, Acharya et al., 2006, Knack and Rahman, 2007, Djankov et al., 2009 | | | | No |
| Increases Aid Fragmentation | Acharya et al., 2006, Knack and Rahman, 2007, Djankov et al., 2009, Fielding and Mavrotas, 2008 | | Acharya et al. (2006); O'Connell and Soludo (2001) | Acharya et al. (2006) | No |

personnel incentives towards donor priorities (Acharya et al., 2006; Dyer, 2005; Knack and Rahman, 2007; Dodd and Olivé, 2011; Djankov et al., 2009; Kotoglou et al., 2008). Sixth, donor proliferation may increase parallel administrative systems for aid management, such as for accounting, procurement, program monitoring, and reporting, resulting in higher transaction costs for the recipient country government and for donors seeking to coordinate with the recipient country government and one another (Organisation for Economic Co-operation and Development, 2008a; Rogerson, 2005; Easterly, 2002; Eyben, 2007; Acharya et al., 2006; Balogun, 2005; Dyer, 2005; Buse, 1999; Djankov et al., 2009; O'Connell and Soludo, 2001; Kotoglou et al., 2008; Burall et al., 2006; Brown et al., 2000; Organisation for Economic Co-operation and Development, 2008b; Manning and Reveyard, 2003; Sundewall et al., 2010). The extent of transaction costs may depend upon the aid modality, with project aid hypothesized to have higher transaction costs than aid delivered for a sector-wide program or as budget support, although evidence of this is mixed (Paul and Vandeninden, 2012; Dyer, 2005; Watt, 2005). Seventh, as the number of donors to a recipient country increases, responsibility for the overall development outcomes of aid at the sector level become more diffused among the various funders, reducing donors' sense of accountability for the system-wide results of their investments, even as donors may continue to pay close attention to the performance of their

particular investments (Easterly, 2002; Acharya et al., 2006; Knack and Rahman, 2007; Djankov et al., 2009). Finally, donor proliferation can increase aid fragmentation, defined as the distribution of aid shares across donors in a specific sector or recipient country, with each donor representing a smaller share of the total aid volume (Acharya et al., 2006; Knack and Rahman, 2007; Djankov et al., 2009; O'Connell and Soludo, 2001; Fielding and Mavrotas, 2008). Fragmentation defined in this way does not refer to a lack of coordination among donors but to the more equitable distribution of aid volume shares across donors, which is a mechanical corollary of increases in the number of donors.

3.2. Secondary effects of donor proliferation

The literature review identified a number of secondary effects of donor proliferation (Table 2), including on recipient country government conditions of budget levels, human resource capacity, and corruption, which mediate the relationship of the primary effects to the intermediate performance determinants of health program performance. Increases in health sector aid volume may increase the recipient country's total health spending in some cases if aid is additional to or crowds in other government, private, or foreign investment (Dodd and Olivé, 2011); however, there is evidence that in many contexts health sector aid may displace recipient

Table 2
Secondary effects of donor proliferation in health sector aid.

| Primary Effect of Donor Proliferation | Secondary Effects of Donor Proliferation | Type of evidence presented for secondary effect | | | Health sector evidence? |
|--|--|---|--|--|-------------------------|
| | | Conjecture, Model, or Anecdotal Evidence only | Qualitative (case study, interviews, some surveys) | Quantitative (descriptive quantification) | |
| Increases Aid Volume | Increases Recipient Government Budget (for aid-supported sector, e.g., health) | | Dodd and Olivé (2011) | | Yes |
| | Decreases Recipient Government Budget (for aid-supported sector, e.g., health) | | | Lu et al. (2010) | Yes |
| Decreases Aid Volume | | | | | |
| Increases Inter-Donor Competition | Decreases the Price of Aid to the Recipient | Rogerson (2005); Knack and Rahman (2007) | | | No |
| | Increases Innovation | Acharya et al. (2006); cf. Easterly (2002); Eyben (2007) | Moore (1992) | | No |
| | Increases Information Hoarding | Acharya et al. (2006); cf. Easterly (2002) | Watt (2005) | | Yes |
| Increases Recipient Control over Aid | Increases Recipient Control over Aid | | Buse (1999) | | Yes |
| | Magnifies effects of Recipient Capacity and Corruption on the determinants of health program performance | | | | |
| Increases Donor Poaching of Recipient Government Staff | Decreases Recipient Government Capacity | Acharya et al. (2006); Knack and Rahman (2007); Djankov et al. (2009) | | | No |
| Increases Transaction Costs and Parallel Systems | Decreases Recipient Government Capacity | Acharya et al. (2006) | Balogun (2005); Dyer (2005); Watt (2005); Brown et al. (2000); Manning and Reveyard (2003) | | |
| | Increases Recipient Government Capacity | Rogerson (2005); Lawson (2009); Paul and Vandeninden (2012) | | | No |
| | Decreases Monitoring of Aid Use | Acharya et al. (2006); Djankov et al. (2009) | | | No |
| Decreases Donor Accountability for Aid Outcomes | Decreases Monitoring of Aid Use | Djankov et al. (2009) | | | No |
| | Decreases Donor Efforts to ensure System-Wide Effectiveness of Aid | Easterly (2002); Acharya et al. (2006); Knack and Rahman (2007) | | | No |
| Increases Aid Fragmentation | Decreases Recipient Capacity (via donor poaching of recipient government staff) | Acharya et al. (2006) | | Knack and Rahman (2007) | No |
| | Increases Recipient Corruption (via decreased monitoring of aid use) | | | Djankov et al. (2009) | No |
| | Decreases Aid Disbursement Volatility | Rogerson (2005) | Dyer (2005) | Fielding and Mavrotas (2008); Hudson and Mosley (2008) | No |

government health spending (Lu et al., 2010). Increased competition among donors is hypothesized to decrease the price of aid for the recipient (Rogerson, 2005; Acharya et al., 2006), and to increase recipient control over aid (Buse, 1999), enabling recipient organizations to potentially achieve more favorable terms (e.g., a larger grant component of aid) and to increase the total volume of aid available. Donor competition is also hypothesized to produce innovation or diversification of donor activities (Acharya et al., 2006; Moore, 1992), which might include different business models, geographic focal areas, or types of technical health sector investments. Such competition, however, is also hypothesized to increase donor hoarding of information about their activities (Acharya et al., 2006; Watt, 2005). In an alternative view, Easterly (2002) argues that donors act as cartels rather than competitors, are not innovative, and have limited ability to hoard information due to public information disclosure requirements (Easterly, 2002).

Donor poaching of recipient organization staff reduces the quantity and quality of recipient country government capacity available for health program implementation. (Acharya et al., 2006;

Knack and Rahman, 2007; Djankov et al., 2009), The transaction costs generated by parallel systems may also reduce recipient capacity by diverting recipient country government staff time from core functions of health program implementation to donor aid management (Acharya et al., 2006; Balogun, 2005; Dyer, 2005; Watt, 2005; Brown et al., 2000; Manning and Reveyard, 2003). Certain types of transaction costs, however, are hypothesized to increase recipient government personnel capacity (e.g., for financial management and procurement) as government staff acquire the skills needed to meet donor reporting requirements (Rogerson, 2005; Lawson, 2009; Paul and Vandeninden, 2012).

The existence of parallel systems for multiple donors makes monitoring how aid is used more difficult (Acharya et al., 2006; Djankov et al., 2009); individual donor organizations may also be less motivated to monitor aid use when responsibility for aid's impacts is dispersed across many donors, which may be especially true as aid is more fragmented (Easterly, 2002; Acharya et al., 2006; Knack and Rahman, 2007). Less intensive monitoring of aid can create opportunities for increased corruption in aid delivery

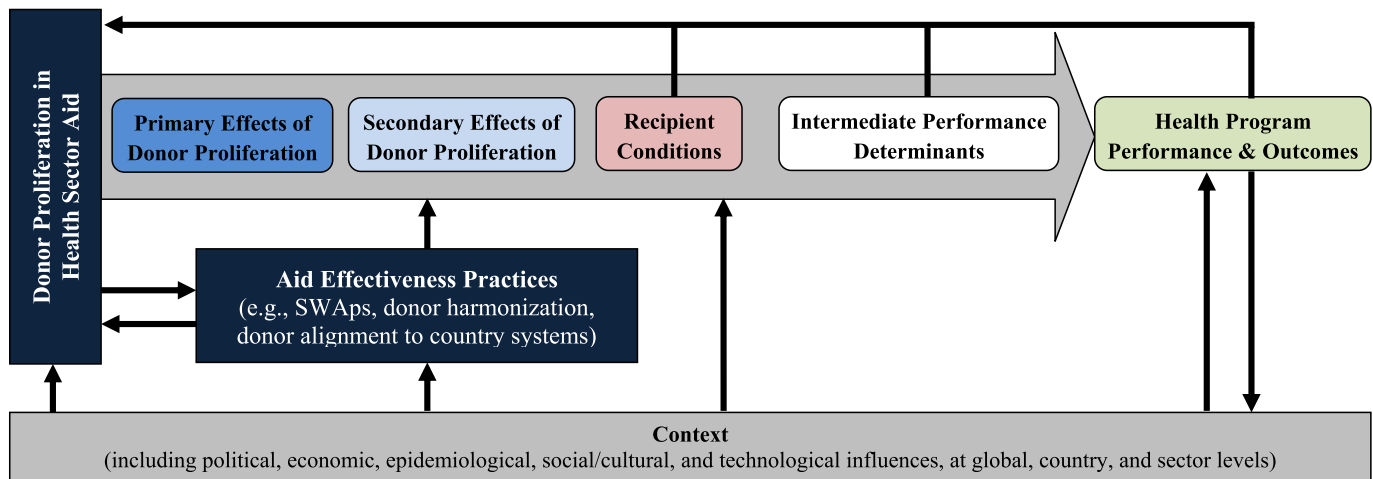


Fig. 1. Conceptual framework of donor proliferation's hypothesized effects on health program performance: overview.

The figure presents a conceptual framework of the hypothesized relationships from the literature review by which donor proliferation affects health program performance. Donor proliferation, i.e., increases in the number of donors providing health sector aid, produces primary effects, some of which operate through secondary effects and some of which affect aid-recipient conditions directly. The primary effects, secondary effects, and recipient conditions all affect health program performance through intermediate performance determinants (choice set, choice quality, and implementation quality of health policy, program, or intervention). Recipient conditions, the quality and performance of health programs, and population health outcomes all have feedback effects on donor proliferation. Donor proliferation is directly affected by the extent of aid effectiveness practices and contextual factors, which also modify donor proliferation's effects on health program performance.

(Djankov et al., 2009). Finally, higher fragmentation of aid (i.e., more donors each providing a smaller share of aid) can reduce disbursement volatility (i.e., standard deviation of aid volumes) because the recipient country government is not depending on a single donor that holds a large share of the aid funds (Rogerson, 2005; Dyer, 2005; Fielding and Mavrotas, 2008; Hudson and Mosley, 2008). From this perspective, recipient countries may prefer higher donor proliferation and the resulting aid fragmentation in order to smooth their receipt of aid flows over donor organizations with different financial cycles and domestic economic conditions as a form of risk management. Although predictability of aid flows (i.e., whether committed aid is transferred from the donor to the recipient as planned) has been identified as important for aid effectiveness, aid fragmentation has not been shown to increase aid predictability per se. Instead, having a more equitable distribution of aid across donors seems to permit recipients to better absorb the consequences of unpredictability by reducing the amount of aid at stake from any single donor that fails to disburse in a timely way. Aid volatility in general has been shown to have costs for recipient country governments, although the effects of volatility in health sector aid specifically have been mixed (Duran and Glassman, 2012).

3.3. Conceptual framework description

The conceptual framework overview (Fig. 1) illustrates how the primary and secondary effects of donor proliferation are embedded within a broader system of influences on donor proliferation and health programs. Recipient conditions, the quality and performance of health programs, and population health outcomes all have feedback effects on donor proliferation; the extent of aid effectiveness practices (e.g., where the existence of strong sectoral planning and financial management processes under a SWAP encourages new donors to enter the health sector) and contextual factors (e.g., the income level of the recipient country) also directly affect donor proliferation and modify donor proliferation's effects on health program performance (Lane and Glassman, 2007; Sweeney et al., 2014a; Duran and Glassman, 2012; Paul et al., 2014; Sweeney et al., 2014b; Woll, 2008; Sundewall et al., 2010;

Pallas et al., 2014, 2015; Shiffman, 2006; MacKellar, 2005; Greco et al., 2008; Younas, 2008; Reinhardt, 2006; Thiele et al., 2007; Feeny and McGillivray, 2008; Esser and Keating Bench, 2011).

Examining a detailed view of the direction of each effect in the pathways from donor proliferation to health program performance (Fig. 2) indicates which effects would need to dominate in order for donor proliferation to deliver a net benefit to a recipient country. In the framework, the choice set of known, available, and feasible health policies, programs, and interventions is increased by higher recipient health budgets and aid volumes (as more money makes more program options feasible), by donor innovation and diversification (which expands the options that are known and available), and by increased quantity and quality of recipient country government human resource capacity (which permit expanded discovery and understanding of available options, and make more options feasible to implement). Even when aid is earmarked for specific disease programs, populations, or geographies, increased aid volumes from additional donors are hypothesized to expand the recipient's choice set by making more choices affordable in that specific domain and/or by permitting redirection of other non-earmarked funding to other health domains. The choice set is reduced by donor information hoarding, which restricts knowledge about possible program options.

The size of the choice set may improve or impair the quality of the choice of health policies, programs, or interventions. If there are insufficient options in the choice set, there may not be an available option with a high likelihood of improving performance, but if there are too many options, decision makers may be overwhelmed and have difficulty assessing the evidence. The quality of the choice – i.e., the basis of the choice of health policy, program, or intervention in evidence that it will improve performance, and the contribution of the choice to system-level coherence and efficiency – is increased by higher recipient country government capacity and greater donor accountability for aid impacts. Choice quality is reduced by corruption within the recipient organization, which may distort choices towards policies or programs that serve personal interests rather than improving population health. The effects of recipient government capacity and corruption on the quality of choice made will be magnified by the degree of recipient control

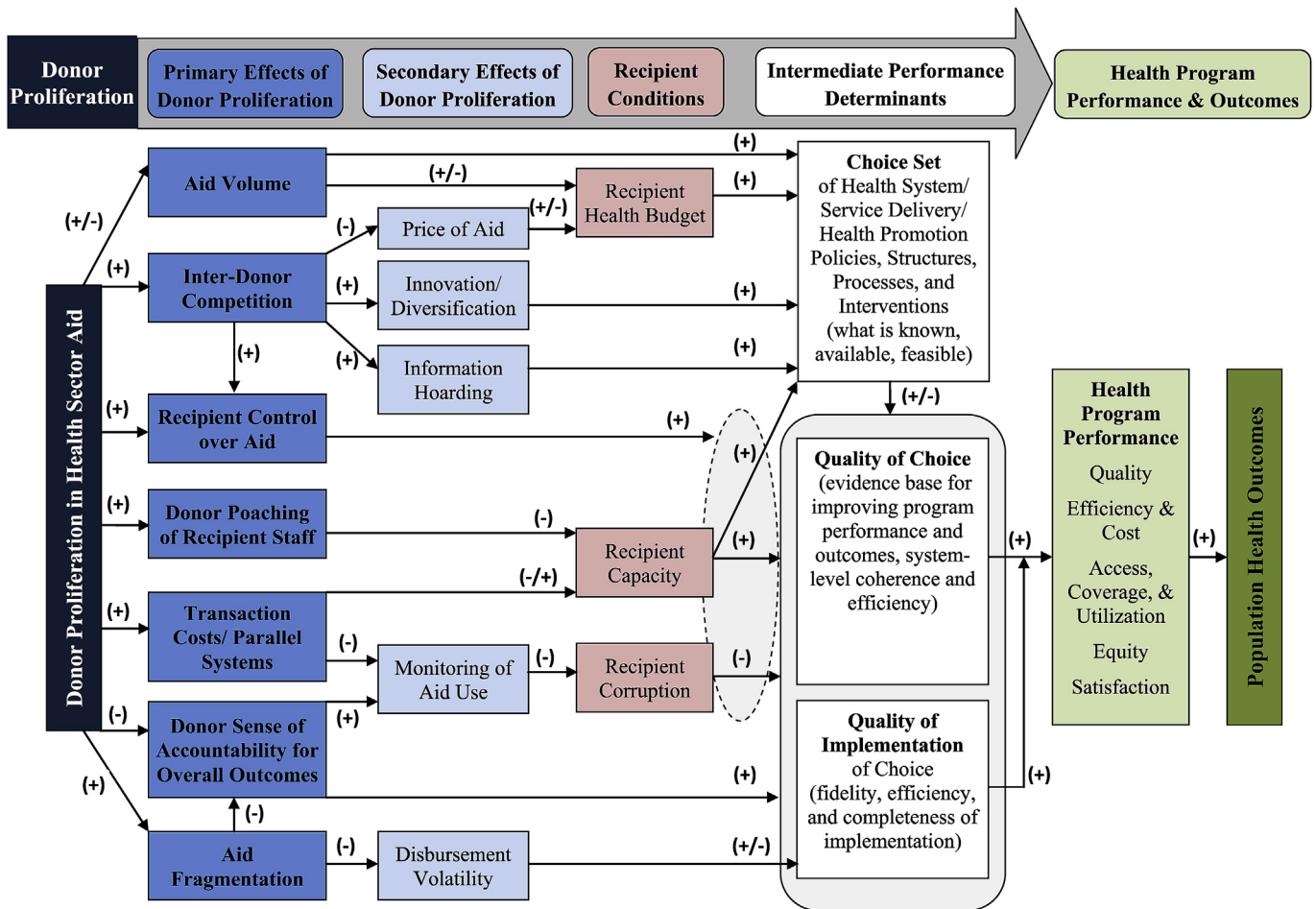


Fig. 2. Conceptual framework of donor proliferation's hypothesized effects on health program performance: detailed view of individual effects.

The figure presents a more detailed view of the direction of the individual effect pathways from donor proliferation to primary effects, secondary effects, recipient conditions, intermediate performance determinants, and health program performance. The direction of the net effect of donor proliferation is the product of the individual effects linking donor proliferation to each subsequent variable. For example, donor proliferation has a (+) effect on aid fragmentation, which has a (-) effect on disbursement volatility, therefore donor proliferation has a (-) effect on volatility, which in turn has a (\pm) effect on quality of implementation, and therefore donor proliferation has a (\pm) effect on quality of implementation).

over aid; if a recipient country government has more control over aid, then the recipient conditions of human resource capacity and organizational corruption matter more for the quality of the health policy, program, or intervention choice made. The quality of implementation of the choice made is affected in the same ways by the factors that influence the quality of the choice itself, as well as by the degree of aid disbursement volatility, which has an undetermined effect on the quality of implementation depending on whether the aid-funded activities in question are substitutes or complements.

In the framework, the quality of the choice of health policy, program, or intervention is hypothesized to directly and positively affect health program performance, with this effect being positively moderated by the quality of implementation. For example, a good policy implemented well would have a large positive effect on health program performance, whereas a bad policy implemented well would have an especially negative effect on performance. Health program performance – as measured by quality, efficiency, cost, access, coverage, utilization, equity, and satisfaction – is assumed to positively impact population health outcomes. For donor proliferation in health sector aid to deliver a net positive effect to the recipient country's health program performance, the magnitude of the combined effects of increased aid volume,

reduced aid volatility, increased donor innovation, increased recipient capacity, and increased recipient control over aid would need to outweigh the magnitude of the combined effects of increased transaction costs, reduced donor responsibility, increased corruption opportunities, and reduced government investment in aid-funded sectors.

Increases in the number of donors influence an array of factors in aid-recipient countries, and may benefit the recipient country through increases in aid volume, reduced aid volatility, innovation in donor activities, increased recipient government capacity in some domains, and increased recipient government control over aid. On the other hand, the conceptual framework also illustrates that the negative effects of donor proliferation extend beyond transaction costs, including the attenuation of donor responsibility for overall system-wide aid outcomes, increased potential for corruption, and possible crowd out of recipient government investment in aid-funded sectors such as health. Given these competing effects, the framework does not provide a single universal prediction about the net effect of donor proliferation on health program performance; instead, the net effect will depend on the empirical magnitude of each of the framework's constituent elements in specific country contexts. The framework indicates that donor proliferation can impact the performance of the health sector;

however, the practical magnitude of donor proliferation's effects relative to other contextual factors remains to be measured.

4. Discussion

The main contribution of the conceptual framework is as an initial step in elaborating a detailed theory of change about the aid delivery challenges that aid effectiveness principles are intended to solve, and how these principles should be applied in specific country settings to address those challenges. Such a theory of change is a prerequisite to theory-based evaluations of the aid effectiveness agenda (White, 2009; Birckmayer and Weiss, 2000; Schmitt and Beach, 2015). Donor proliferation is a phenomenon that can complicate aid delivery but also bring benefits for recipient countries. The conceptual framework helps to organize the diverse hypotheses from the literature to reveal the conditions under which donor proliferation in health sector aid could deliver net benefits to a recipient country's health program performance and population health outcomes, and to highlight the potential for competing or unintended effects. As health aid programs differ greatly in scale and scope and much health aid is targeted to specific diseases, populations, or locations, the conceptual framework can be applied at different levels ranging from the health sector as a whole to a specific disease area (e.g., HIV/AIDS) to a specific recipient organization.

5. Limitations

The results of this study should be interpreted in light of several limitations. First, the conceptual framework is based on the results of a literature review; although multiple search approaches were used, the study did not conduct an exhaustive systematic literature review. Literature that was not included in the review may have contained other hypotheses or evidence. Second, the conceptual framework does not address in detail the magnitude or direction of the feedback effects from health program performance and aid effectiveness practices to donor aid flows, or the linkages from individual aid effectiveness practices to each of the primary and secondary effects of donor proliferation.

6. Conclusions and implications for future research and policy

The conceptual framework has several implications for current research and policy making around health sector aid effectiveness. Exactly how the aid effectiveness agenda is implemented in a particular country setting is a critical moderator of donor proliferation's effects. Implementing aid effectiveness principles such as harmonization among donors or donor alignment with recipient country systems may create new transaction costs, although the incidence of these costs may shift from recipient country governments to donors, a possibility noted in previous literature (Rogerson, 2005; Balogun, 2005; Dyer, 2005; Watt, 2005). In this case, partial implementation of aid effectiveness principles may have the unintended consequence of maintaining total transaction costs while curtailing possible benefits from donor proliferation such as higher aid volumes, donor innovation, or recipient control over aid, which may lessen country ownership. The framework thus supports the relevance of implementation of the aid effectiveness agenda in its entirety, as piecemeal application of some principles without others may lead to unintended suboptimal development outcomes.

The framework also highlights the challenge of finding the right balance of donor accountability for overall sector outcomes, with donors taking some responsibility for health impacts beyond their

own specific projects but not so much responsibility that all health impacts are attributed solely to their aid or pursued independently of recipient government priorities. On the one hand, the framework suggests the potential for a classic diffusion of responsibility problem as the number of donors and aid fragmentation increase, which makes monitoring aid and attributing either success or failure to a specific donor's contribution more difficult; however, it is not clear from the available evidence that the logical inverse (i.e., fewer donors each with a relatively larger and more visible share of the health sector aid portfolio) would necessarily improve donors' accountability for overall health sector outcomes. If the largest share of health sector aid is delivered by disease- or activity-specific donors, such donors may be focused on performance indicators specific to their focal health area rather than broader sector-wide performance or population health measures. Although this review did not specifically examine approaches to increasing donor accountability for sector-wide outcomes, these may include encouragement of un-earmarked funds, donor alignment to the country's health sector plan, and country-led coordinated monitoring and evaluation approaches across all health sector donors, regardless of the magnitude of each donor's contribution (Victora et al., 2011; International Health Partnership+ and World Health Organization, 2011). The conceptual framework also suggests that there are other avenues by which health sector aid might be made more effective, including through investments to retain and augment recipient government capacity.

In practice, the conceptual framework can be used to help diagnose what the actual problems are with having an increasing number of donors in a country's health sector, and to prompt new questions for dialogue among donors and recipient country government partners about whether a specific aid effectiveness approach – such as a SWAp, a pooled procurement mechanism, or a single monitoring and evaluation platform – will address those problems. For example, in considering a SWAp, the framework might prompt questions such as whether the SWAp would increase or reduce the number of donors entering the sector, how would a SWAp need to be designed to reduce information hoarding while preserving innovation due to inter-donor competition, and whether the benefits of reduced transaction costs from a SWAp would offset the possible loss in recipient country negotiating power with individual uncoordinated donors. While some of these questions are subjects of ongoing research and debate (Sweeney et al., 2014a; Paul et al., 2014; Sweeney et al., 2014b), the conceptual framework could be used to help frame questions that should be posed about any given mechanism designed to put aid effectiveness principles into practice. As shown in the conceptual framework, aid effectiveness practices such as SWAps also moderate the intermediate determinants of health program performance and may therefore have overall net benefits for system-level coherence and efficiency apart from their relationships with donor proliferation.

This study's synthesis of the existing hypotheses and evidence about donor proliferation's effects on health program performance reveals that many of the hypothesized linkages require empirical validation. Currently, many of the pathways in the conceptual framework lack evidence from rigorous qualitative or quantitative studies, in part due to the difficulty of measuring some concepts (such as transaction costs) and the political nature of development aid that makes prospective randomized designs and other research methodologies difficult if not largely infeasible. Future research should seek to quantify empirically the effects of donor proliferation in health sector aid identified in the framework in specific country settings and across different types of health aid (e.g., earmarked disease-specific funding, health system strengthening funding), as well as through cross-country statistical analyses.

Additional elaboration and quantification of the magnitude of the feedback loops from health program performance and population health outcomes to donor proliferation and the influences of aid effectiveness practices and broader contextual factors is also needed. Although the conceptual framework was developed thinking of the recipient country government as the recipient organization, understanding how donor proliferation affects the channeling of aid to government versus non-governmental recipient organizations is another important area for future work. This conceptual framework can also serve as an example of similar work that is needed to synthesize the hypotheses and evidence around other aid delivery challenges, such as lack of sustainability and lack of country ownership, to inform theory-based evaluations of aid effectiveness agenda implementation.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at <http://dx.doi.org/10.1016/j.socscimed.2017.01.004>.

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