

Development Impact Bonds Targeting Health Outcomes

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Abstract

As of December 2018, seven development impact bonds (DIBs) have been launched across seven countries with nearly US\$55million in cumulative outcome funding. DIBs fund public services through contracts where private investors provide upfront flexible funding to service providers and outcome funders repay these investors based on the outcomes achieved by people receiving services. Three DIBs specifically target health outcomes: the Humanitarian Impact Bond, the Utkrisht Impact Bond, and the Cameroon Cataract Bond. The three “health DIBs” involve US\$26.5 million in upfront investment, US\$38.1 million in outcome funding and aim to impact the health of at least 31,600 people.

Using publicly available information, we describe all seven DIBs, and evaluate the three “health DIBs” in more detail, comparing their stakeholders, implementation, and outcome structures. Building on a scoping review of relevant literature, we outline health DIBs in the pipeline and note that the potential of DIBs as a funding structure is hindered by the lack of publicly available information on their estimated impact and value for money. We offer three recommendations to improve evaluation and inform development of DIBs in the future: (1) publish plans and evaluations, (2) create and use consistent reporting guidelines, and (3) allocate funding to evaluate impact and value for money.

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Overview

As of December 2018, seven development impact bonds (DIBs) have been launched across seven countries. DIBs fund public services through contracts where payment is based on improved outcomes achieved by the people receiving the services. DIBs involve a core group of outcome funders, service providers, and private investors, with additional organisations offering technical support. The seven DIBs to date focus on improving agricultural, education, employment, and health outcomes for people and communities, and almost US\$55 million has been allocated to outcome payments for these projects.

This policy paper focuses on three ongoing DIBs targeting health outcomes, to provide a comparative overview of these projects and recommend ways to ensure ongoing and future projects are evaluated in a useful and usable manner. This policy paper builds upon previous publications synthesising information on DIBs, as well as a scoping review of relevant literature (outlined in Appendix A).

First, we introduce the structure of and rationale for using development impact bonds. Second, we outline details for completed and ongoing DIBs, including their outcomes focus and funding. Third, we describe in detail the three DIBs focused on health outcomes: the Humanitarian Impact Bond, the Utkrisht Impact Bond, and the Cameroon Cataract Bond. Fourth, we look at the stakeholders, implementation, and outcome structures involved in these “health DIBs” to explore differences and similarities. We then evaluate the projects’ structures using key principles for DIBs set out in the 2013 [report](#) of the Center for Global Development and Social Finance Development Impact Bond Working Group (Center for Global Development and Social Finance 2013). Fifth, we look to future projects, outlining health DIBs that are reportedly in planning, and describe a sample of health system challenges authors have suggested DIB funding could address. We close this paper with a discussion about the future of evaluating if a DIB is an appropriate funding structure and offer recommendations to improve future evidence: (1) publish plans and evaluations, (2) create and use consistent reporting guidelines, and (3) allocate funding to evaluate impact and value for money.

1. Introducing Development Impact Bonds

1.1 What are Development Impact Bonds?

Development impact bonds are a results-based financing structure for external financing of public services in low- and middle-income countries (LMICs). “DIBs,” as they are commonly called, adapt the model of “social impact bonds” (SIBs) for financing public services. As of January 2018, there are SIBs funding public services and social outcomes in over a dozen high-income countries (Iovan, Lantz, and Shapiro 2018). SIBs were first introduced in the United Kingdom in 2010 as a new way to fund social services (Nicholls and Tomkinson 2015). There is limited empirical evidence on the impact of using a SIB and

its value for money.¹ DIBs closely adapted the structure and rationale for using SIBs—the potential to address problems associated with existing funding approaches to public services (see section 1.2). The difference between DIBs and SIBs is that DIBs can involve foreign funding and SIBs only involve domestic funding. Planning for DIBs first began in 2012, and the first two DIBs launched in 2015 to support agricultural development in Peru and girls’ education in India (Government Outcomes Lab 2018a).

1.2 How are DIBs Structured?

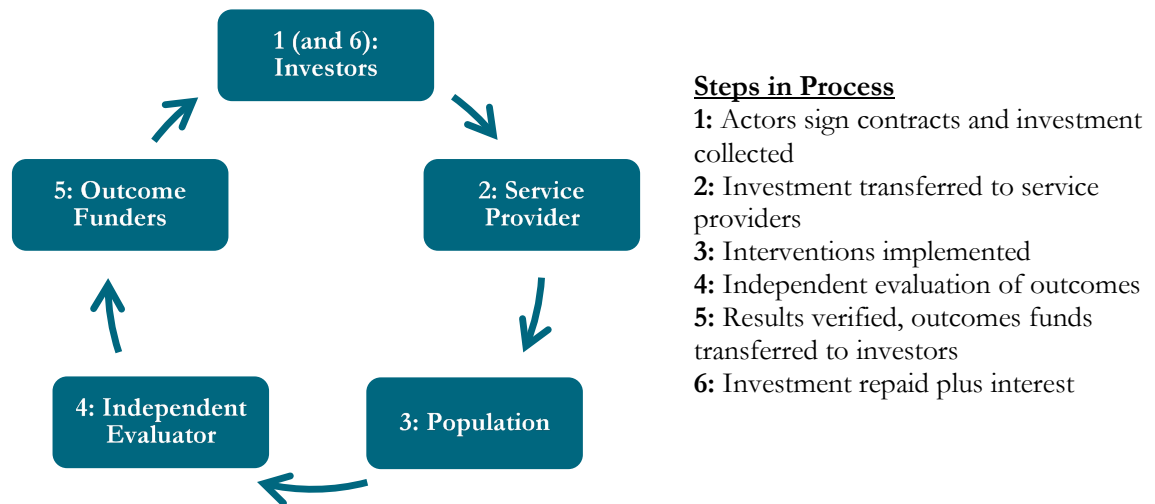
DIBs link multiple organisations via outcomes-based contracts, where payment for delivery of public services is only made following achievement and verification of a predefined set of social outcomes associated with services. The core group of organisations involved in a DIB includes outcome funders, service providers, and private investors. Typically, an outcome funder or service provider will propose the use of a DIB and private investors will be involved once initial design of the DIB is complete.

From the outset, outcome funders (typically) define the population cohort and set of social outcomes they will pay for. Once outcomes are reported and independently verified, outcome funders release payments that positively correspond to the level of results achieved—better outcomes result in bigger payments. Service providers implement programmes of interventions for target population cohorts that are designed, and adapted over the course of the DIB, to achieve the defined set of outcomes. Private investors provide the upfront financial investment for service providers to implement a program of interventions. Outcome funders repay investors their initial investment plus an interest payment if outcomes are achieved. If outcomes are not achieved, investors can lose some or all of the interest payment and their upfront investment. Beyond the core group, DIB contracting and implementation can also involve project intermediaries, independent evaluators, and technical support. Project intermediaries can play a central role in leading a DIB from convening stakeholders to coordinating project implementation.

The design and contracting of a DIB can take 1 to 3 years and involves stakeholder engagement, statistical modelling to estimate expected outcomes and costs, and negotiations to decide what outcome payments and verification methods to use in the DIB (Oroxom, Glassman, and McDonald 2018). Once design and contracting are complete, a DIB begins the implementation stage, which lasts 3 to 5 years (based on ongoing DIBs). Figure 1 displays the basic steps of implementing and completing a DIB, from contract signing to investment repayment.

¹ Value-for-money evidence can inform decision makers about the relative cost-effectiveness of using a SIB versus another intervention or no intervention at all.

Figure 1. Steps involved in implementing and completing a DIB



Source: Adapted from Center for Global Development and Social Finance (2013)

1.3 Why Use DIBs as a Funding Structure?

In 2013 the Center for Global Development and Social Finance Development Impact Bond Working Group published the report that formalised the concept of DIBs (Center for Global Development and Social Finance 2013).² *Investing in Social Outcomes: Development Impact Bonds* outlined three ways DIBs can shift the paradigm of funding public services:

1. DIBs leverage private capital to address market failures which traditional funders (i.e. governments or other donors) cannot because of political, financial, or operational constraints.
2. DIBs introduce incentives for investors to support the performance of implemented projects because financial returns are tied to the success of these projects.
3. DIBs create incentives to fund programmes over a longer period (5-10 years) and allow service providers to create the requisite foundations to scale up interventions.

The market failures addressed by DIBs include problems with collective effort between payers and providers of public services. A failure in collective effort among organisations is referred to as a “coordination problem.” Coordination problems involve a failure by organisations to achieve better outcomes because they do not coordinate their decision making. Coordination problems are a persistent challenge for health systems (Pauly 1968; Pauly and Swanson 2017). For instance, the Cameroon Cataract Bond addresses a coordination problem faced when improving access to cataract surgeries in Cameroon

² Social Finance is an impact bond intermediary who structured the first UK social impact bond (Nicholls and Tomkinson 2015).

(Oroxom, Glassman, and McDonald 2018). The reasons behind the problem included difficulties in scaling socially valuable services, investor hesitance to supply low-cost capital to high social return projects, and impediments to innovation within typical input-focused financing arrangements.

DIBs provide incentives and support structures to outcome funders, service providers, and investors to improve the analysis and use of data in projects. Incentives for outcome funders, to collect data about population characteristics and the implementation of an intervention, arise due to outcome payments being contingent on the outcomes of people receiving services, and there should be a robust way of evaluating whether outcomes occur as a result of the DIB project or not. Incentives for private investors and service providers arise because they rely on learnings on monitoring and evaluating project data to ensure outcomes are on track to be met. This monitoring and evaluation is coordinated via performance management systems that run as a core part of the DIB to analyse the characteristics of people receiving services and their receipt of those services to inform better service delivery in the future. Comparatively, if projects are funded based on a defined set of inputs, such as number of persons utilising a type of healthcare, there is less incentive for funders or service providers to spend resources (unless mandated) on evaluation versus spending on more materials and services. There is also no additional active support from private investors. While most implemented DIBs are ongoing and there is a lack of precedent on how to use project monitoring data in DIBs, evidence from the Educate Girls DIB suggests there are benefits to scaling up a public services within the DIB model that are directly connected with the monitoring and evaluating project data (ID Insight 2018).

Evaluations of results-based financing (RBF) projects could provide further insight on the rationale for using DIBs, but similarly suffer from a lack of evidence on impact and value for money. RBF projects do not directly involve private investors; they simply involve outcome funders paying service providers based on an outcomes-based contract. Evidence syntheses of RBF project evaluations have found that there is some evidence that RBF can improve service quality. However, the conclusions are weak due to a lack of published evaluations, some of which suffer from limited statistical power (Das, Gopalan, and Chandramohan 2016). There is also limited evidence on the cost-effectiveness of RBF in LMICs (Chi et al. 2018), despite the explicit monetisation of outcomes in projects and the implicit aim of RBF to improve spending effectiveness. Without such evidence, conclusive statements are difficult to make about if, and under what circumstances, RBF is good value for money as a funding approach.

2. Development Impact Bonds in Practice

2.1 How are Development Impact Bonds Used?

Seven DIBs were launched between 2015 and 2018 (figure 2).³ The Asháninka Impact Bond in Peru and Educate Girls DIB in India are the only DIBs that have completed the implementation process (figure 1) and paid investors based on outcomes achieved. Five of the seven DIBs are ongoing, with two expected to make outcome payments in 2020 and three in 2022.

Figure 2. Timeline, location, and policy area (DIBs launched 2015–2018)

Project	Duration (Months)	2015	2016	2017	2018	2019	2020	2021	2022
Asháninka Impact Bond	10	Peru							
Educate Girls DIB	36	India							
Utkrisht Impact Bond	36			India					
Village Enterprise DIB	36			Kenya and Uganda					
Humanitarian Impact Bond	60			Mali, Nigeria, Democratic Republic of Congo					
Cameroon Cataract Bond	60			Cameroon					
Quality Education India DIB	48					India			

Policy Area			
Education		Agriculture	
Health		Employment	

Sources: Belt, Kuleshov, and Minneboo 2017; Government Outcomes Lab 2018b; Convergence, Palladium, and Bertha Centre 2018; Government Outcomes Lab 2018c; Oroxom, Glassman, and McDonald 2018; Quality Education India 2018

Table 1 displays how DIBs vary in their outcome focus between health, economic empowerment, and education. Three DIBs focus on health outcomes via quality improvements for child and maternal healthcare, regaining physical mobility, and receipt of good-quality cataract surgeries. These projects are discussed in detail in section 3. The two DIBs targeting economic empowerment include one focused on agricultural sector support (Asháninka Impact Bond) and another catalysing entrepreneurial activities to create employment opportunities (Village Enterprise DIB). Both the Educate Girls DIB and the Quality Education India DIB focus on improved education outcomes through enhancing attendance rates and quality of schooling (Quality Education India 2018).

DIBs also vary in the scale of their funding and activities (table 1). The Asháninka Impact Bond in Peru and Educate Girls DIB involved less than US\$0.5m outcome funding. The

³ Based on information published prior to December 2018.

five other DIBs, all launched in 2017 and 2018, have outcome funds of more than US\$2m; funds for the Humanitarian Impact Bond are more than twice as large as any other DIB at US\$27.6m. The Educate Girls DIB focused on service provision by one NGO and its running involved five organisations, and its successor, the Quality Education India DIB conducts activities led by three NGOs and is run by a consortium of 16 partner organisations (Quality Education India 2018).

Table 1. Interventions, outcomes, and outcome funding (DIBs launched 2015-2018)

Development Impact Bond	Intervention	Outcomes	Outcome Funding (Max)
Asháninka Impact Bond	Support existing agricultural project	Improve sales, yield, and sustainability practices by farmers	US\$110,000
Educate Girls DIB	Supported improved school enrolment and education quality	Improve school enrolment and test scores	US\$422,000
Utkrisht Impact Bond	Support improved quality of maternal and newborn care	Health facilities reach accredited quality standards	US\$8,000,000
Village Enterprise DIB	Support poor households to set up micro-enterprises	Increase incomes and living standards	US\$5,200,000
Humanitarian Impact Bond	Provide physical rehabilitation services	Construct new facilities and improve ratio of staff to persons regaining mobility	US\$27,600,000
Cameroon Cataract Bond	Supported improved access to eye surgery at a new hospital	Provide high-quality and sustainable eye surgeries, particularly for the poorest patients	US\$2,500,000
Quality Education India DIB	Provide free private school access for children, staff training and leadership development	Address gap in children's expected and actual learning levels	US\$11,000,000

Sources: Belt, Kuleshov, and Minneboo 2017; Government Outcomes Lab 2018b; Convergence, Palladium, and Bertha Centre 2018; Government Outcomes Lab 2018c; Oroxom, Glassman, and McDonald 2018; Quality Education India 2018

2.2 How do DIBs Work in Practice?

Publicly available case studies discuss the design and contracting of the Asháninka Impact Bond (Belt, Kuleshov, and Minneboo 2017), Educate Girls DIB (Government Outcomes Lab 2018b; ID Insight 2018), Cameroon Cataract Bond (Oroxom, Glassman, and McDonald 2018), and Utkrisht Impact Bond (Convergence, Palladium, and Bertha Centre 2018; Wainer 2018).⁴ These case studies discuss how DIB designs evolve from initial planning to implementation. Collectively the case studies also reveal common DIB challenges, such as

⁴ Save the Children has also published a case study on the design and contracting for an upcoming DIB in Cameroon focused on maternal and newborn health outcomes (Wainer 2018).

the management of stakeholders' different perspectives and priorities on funding and contract structures.

There is limited information available about DIBs' effectiveness in terms of their impact or value for money. The lack of information on DIBs' impact is partially due to the small number of DIBs that have completed the implementation process and have paid investors based on outcomes achieved. Impact information is only available from published case studies on the Asháninka Impact Bond in Peru and the Educate Girls DIB in India (see sections 2.2.1 and 2.2.2). No value-for-money information is available on any of the seven DIBs due to their evaluation structures not requiring it be published.⁵

2.2.1 Asháninka Impact Bond

The Asháninka Impact Bond paid for improved agricultural outcomes achieved by the Asháninka indigenous people in Peru. The DIB provided additional support in the final year of a 3-year agricultural project focused on scaling costs up the Kemito Ene Association (KEA), a local farmers' co-operative (Belt, Kuleshov, and Minneboo 2017). Table 2 outlines the four project outcomes and evaluation approaches. Outcomes were evaluated using assessments before and after the DIB provided additional support (pre-post evaluation); data sources included field staff reporting and KEA records on purchases and sales. Each of the four outcomes were allocated a separate payment, split into four quartiles based on the proportion of the outcome achieved.

Only two of the outcomes in the Asháninka Impact Bond were fully achieved (table 2). Cocoa yield did not meet the minimum results level (25 percent) for outcome payments to be released. Nonetheless, the bond was deemed a successful pilot of the DIB model based on the completion of contracting, evaluation, and triggering of outcome payments (Belt, Kuleshov, and Minneboo 2017). The DIB's publicly available case study highlights target-setting problems within the DIB structure, including the challenge of managing outcome targets that turn out to be unrealistic (Belt, Kuleshov, and Minneboo 2017). Unrealistic estimates can be due to over optimism or inaccurate data about the effectiveness of project interventions when estimating outcomes and outcome payments. The experience of the Asháninka Impact Bond mirrors findings from an evaluation of SIBs targeting outcomes in UK health and social care. The evaluation of SIBs also found that over-optimistic targets could create or exacerbate negative tensions among staff, and that they led to gaming of some outcome metrics (Fraser et al. 2018).

⁵ Value-for-money analysis, also known as effectiveness analysis, requires comparable information about outcomes and costs for both intervention and comparator groups.

Table 2. Asháninka Impact Bond: Project outcomes

	Outcome	Evaluation Method	Target	Result
#1	Sales to the KEA co-op	Pre-post evaluation	More than 60% of members increase their sales by over 20%	75% of target met. Partial outcome payment made
#2	Cocoa yield by KEA members	Pre-post evaluation	More than 60% of members increase cocoa yield by more than 600 kg/hectare	Less than 25% of target met. No outcome payment made
#3	Cocoa bought and sold by KEA in final year	Pre-post evaluation	More than 35 tonnes	100% of target met. Full outcome payment made
#4	Coffee plots growing rust-resistant leaves	Pre-post evaluation	More than or equal to 40 producers have more than or equal to 0.5 hectares of newly established plots	100% of target met. Full outcome payment made

Source: Belt, Kuleshov, and Minneboo 2017

2.2.2 Educate Girls DIB

The Educate Girls DIB funded improved girls’ education outcomes in India. The DIB financed three years of service provision in the state of Rajasthan by Educate Girls, an NGO with a community-based approach to education. Evaluations combined a cluster randomised controlled trial for education quality improvement with a pre-post evaluation of girls’ school enrolment. The trial randomised, at the school level, from a sample of 332 schools into two groups of 166 schools (ID Insight 2018). The Annual Status of Education Report (ASER) testing tool measured learning outcomes and, by association acted as a proxy for changes in the quality of education received. The ASER testing tool assesses basic literacy and math competencies, scoring a student’s score “learning level” out of 16 points (ID Insight 2018).

The DIB surpassed both outcomes targets (table 3). When limited improvement was measured after year 1 and 2, project managers reorganised and increased support for their intervention which resulted in surpassing the targets by the time the DIB concluded (ID Insight 2018). Stakeholders involved in the Educate Girls DIB, which paid out on outcomes in July 2018, are providing guidance for the Quality Education DIB. The Quality Education India DIB launched in September 2018 and applies a larger scale approach to improving enrolment and quality of schooling in India (Belt, Kuleshov, and Minneboo 2017; Quality Education India 2018).

Table 3. Educate Girls DIB: Project outcomes

	Outcome	Evaluation Method	Target	Result
#1	Girls (age 7-14) enrolment in schools	Cluster randomised controlled trial	Re-enrolled in education: 79% of eligible students	160% of target met (92% enrolled). Corresponding outcome payment made
#2	Improved quality of education in schools	Cluster randomised controlled trial	Aggregate versus control group: Improvement of 5,592 points on ASER tests	116% of target met (8,940 improvement on ASER tests). Corresponding outcome payment made

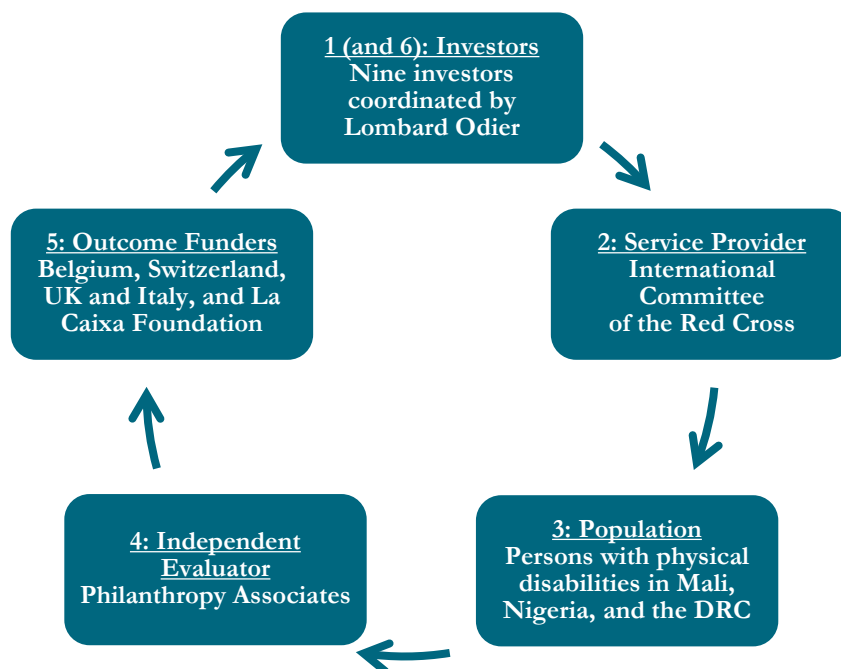
Source: ID Insight 2018

3. Development Impact Bonds Targeting Health Outcomes

3.1 Humanitarian Impact Bond

The Humanitarian Impact Bond launched in September 2017 to provide five years of funding towards improving physical mobility outcomes. The DIB funds activities within the International Committee of the Red Cross' (ICRC) Physical Rehabilitation Program, which has provided physiotherapy and access to mobility devices since 1979 and currently operates in over 100 centres worldwide (International Committee of the Red Cross 2016). The Humanitarian Impact Bond will open three new rehabilitation centres in Mali, Nigeria, and the Democratic Republic of Congo (DRC). The DIB funds construction of the centres and operations support for two years after opening, including training additional staff and implementing new IT tools. The DIB is expected to support at least 3,600 persons who have physical disabilities caused by war, natural disasters, congenital impairments, or disabling diseases to regain mobility (Government Outcomes Lab 2018c).

Figure 3. Organisations implementing and completing the Humanitarian Impact Bond



Based on Figure 1, "Steps Involved in Implementing and Completing a DIB"

The service provider and project lead of the Humanitarian Impact Bond is the ICRC. The DIB’s outcome funders are government agencies from Belgium, Switzerland, United Kingdom and Italy, and the La Caixa Foundation. The Government of Netherlands supplied grant financing for the DIB’s design and structuring (Government Outcomes Lab 2018c). The DIB’s private investors are a consortium of nine investors coordinated by Lombard Odier, a French bank. Total upfront investment for the Humanitarian Impact Bond is US\$19.7million and total outcome funding is US\$27.6million (table 4).

Table 4. Humanitarian Impact Bond: Key information

Location	Focus	Upfront Investment	Outcome Funding	Interest Payment (Max)
Mopti, Mali; Maiduguri, Nigeria; Kinshasa, Democratic Republic of Congo	Physical rehabilitation services	US\$19,700,000	US\$27,600,000	7%

Source: Government Outcomes Lab 2018c

If outcomes are achieved, private investors will receive 100 percent of their upfront investment back. If the DIB achieves outcomes above prespecified target levels, investors will receive a maximum of 7 percent interest on their investment as a positive financial return (table 4). If outcomes are not achieved, investors can lose up to 40 percent of their original investment and all of their interest payments (table 5). ICRC also faces downside financial risk for outcome #2, and will repay a portion of private investors’ upfront

investment if the staff efficiency ratio in new centres does not reach 100 percent of the level of the baseline average (KOIS Invest 2017).

Payments for outcomes #1 and #2 in table 5 were estimated and negotiated by the Humanitarian Impact Bond’s outcome founders, service provider, and private investors. Philanthropy Associates will independently evaluate and verify the achievement of DIB outcomes. La Caixa Foundation will only pay out on outcome #1—the opening of new rehabilitation centres—in July 2020. The rest of the outcome funders⁶ will pay out on outcome #2—the number of disabled persons regaining and retaining mobility relative to the number of centre staff (staff efficiency ratio)—in September 2022. The staff efficiency ratio of the three new centres will be compared to an average calculated from existing centres with similar characteristics in their second year of operations.

Table 5. Humanitarian Impact Bond: Outcomes

	Outcome	Evaluation Method	Target	Allocated Outcome Payment
#1	Opening of new physical rehabilitation centres	Pre-post evaluation	All 3 physical rehabilitation centres open for operation by July 2020	4.1% of total (€1,000,000)
#2	Improvement in staff efficiency ratio	Evaluation compared to baseline average from sample of comparable existing centres in 2 nd year of operations	New centres achieve, on average, higher than 100% of the baseline average staff efficiency ratio by end of 2 nd year of operations	95.9% of total (CHF 25,015,779)

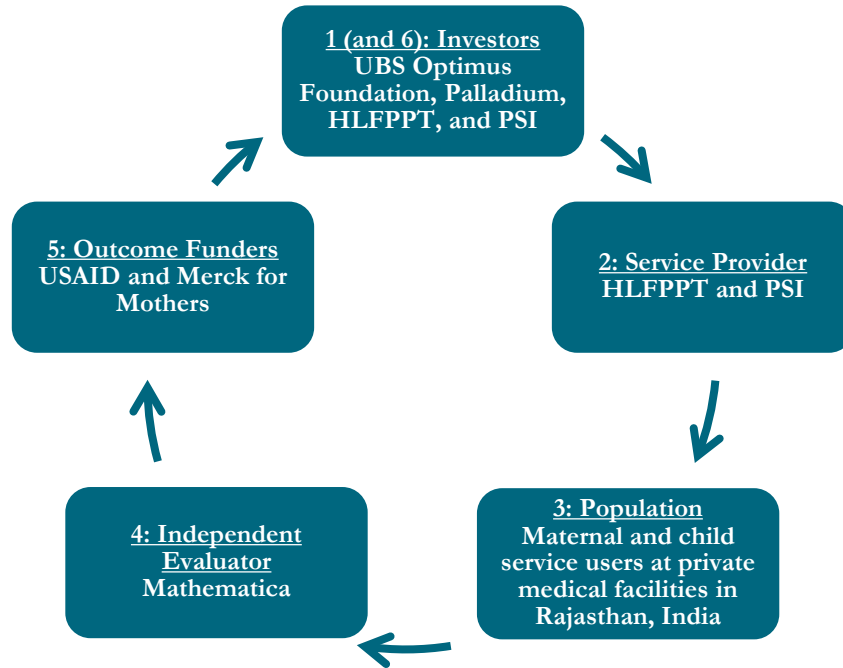
3.2 Utkrisht Impact Bond

The Utkrisht Impact Bond launched in November 2017 to provide three years of funding for improving maternal and newborn health outcomes in India (Overseas Private Investment Corporation 2017). The DIB funds NGO support to improve the quality of service provision in up to 444 of 1,700 private health facilities in the state of Rajasthan. Outcome payments are tied to these private health facilities achieving a new Indian joint quality standard for maternal and newborn healthcare, which focuses on labour and delivery services. This metric was chosen because a baseline survey of health facilities, undertaken during the DIB’s design, revealed large gaps between current quality levels and those required to meet the joint quality standard. If the joint quality standard is implemented successfully in these facilities, up to 10,000 maternal and newborn deaths could be averted over a five-year period (Convergence, Palladium, and Bertha Centre 2018). If private health

⁶ Government agencies from Belgium, Switzerland, United Kingdom, and Italy.

facilities achieve quality accreditation, they will also gain access to government reimbursement plans, cash transfer schemes, and insurance programs.

Figure 4. Organisations involved in the Utkrisht Impact Bond



Based on Figure 1, "Steps Involved in Implementing and Completing a DIB"

Palladium, an intermediary organisation, coordinated the development of the Utkrisht Impact Bond and convened stakeholders, including the Rajasthan government, in initial discussions on funding approaches to improve maternal and child care. The DIB’s outcome funders are the United States Agency for International Development (USAID) and Merck for Mothers. The service providers are the Hindustan Latex Family Planning Promotion Trust (HLFPPT) and Population Services International (PSI). The private investors are the UBS Optimus Foundation, Palladium, and the DIB’s service providers (the HLFPPPT and PSI) (Convergence, Palladium, and Bertha Centre 2018). While the Rajasthan government is not directly involved in the implementation of this DIB, it is expected that the government could become an outcome funder in a follow-on project if the Utkrisht Impact Bond is successful. Total upfront investment for the Utkrisht Impact Bond is US\$4.8million and total outcome funding is US\$8million (table 6). USAID and Merck for Mothers also set aside an US\$1 million for project evaluation (Convergence, Palladium, and Bertha Centre 2018).

Table 6. Utkrisht Impact Bond: Key information

Location	Focus	Upfront Investment	Outcome Funding	Interest Payment (Max)
Rajasthan, India	Quality of maternal and newborn care	US\$4,800,000	US\$8,000,000	15%

Source: Convergence, Palladium, and Bertha Centre 2018

Achievement of target outcomes for the Utkrisht Impact Bond at a minimum of 360 facilities gives an expected internal rate of return of ~7.1 percent.⁷ Overall returns on the DIB are capped at 15 percent of the overall cost of implementation activities (estimated upfront as \$4.8 million). Prior to the DIB launch, financial regulations on UBS investment products meant that getting upfront investment for the Utkrisht Impact Bond could be delayed by a year. To prevent delay, UBS did not offer the Utkrisht Impact Bond as an investment product to its private clients. UBS instead provided US\$3.5million in upfront funding through the UBS Optimus Foundation. The UBS Optimus Foundation is a grant-making organisation attached to UBS Investment Bank and is funded by donor capital from UBS private investment clients. Upfront investment and interest payments for Palladium, HLPPT and PSI are 100 percent at risk and will be repaid based on two outcomes (#1 and #2 in table 7). Outcome payments allocated to the UBS Optimus Foundation grant money will not be repaid to clients and will instead go into a ring-fenced evergreen fund, operated by the UBS Optimus Foundation, which will provide future grants towards improving maternal and child health outcomes.

Payments for outcomes #1 and #2 were negotiated by the Utkrisht Impact Bond's outcome funders and private investors. Mathematica, an independent evaluation agency, will verify the achievement of DIB outcomes. The payments are split between achieving progress towards and reaching the minimum requirements for the joint quality standard. Meeting the standard does not require meeting all of its criteria, just meeting a minimum number of them (Convergence, Palladium, and Bertha Centre 2018). The joint quality standard combines criteria from existing patient care and hospital management standards with guidance for specific practices in quality maternal and newborn care. These standards were set by the National Accreditation Board for Hospitals (NABH) and Federation of Obstetric and Gynaecological Societies of India (FOGSI). The joint quality standard contains 10 "chapters" of NABH standards which include several quality "points" and 16 applicable FOGSI standards (Gustafsson-Wright et al. 2017).

⁷ Internal rate of return is the expected interest earned on the project.

Table 7. Utkrisht Impact Bond: Outcomes

	Outcome	Evaluation Method	Target	Allocated Outcome Payment
#1	Improved quality of care provision	Pre-post reporting and evaluation	<u>More than or equal to</u> 30% of points met in all 10 chapters of NABH standards AND <u>More than or equal to</u> 40% of FOGSI standards are 100% met	25% of total (US\$4,500 per facility)
#2	Reaching JQS level of care provision	Pre-post reporting and evaluation	<u>More than or equal to</u> 50% of points met in all 10 chapters of NABH standards AND <u>More than or equal to</u> 70% of FOGSI standards are 100% met	75% of total (US\$13,500 per facility)

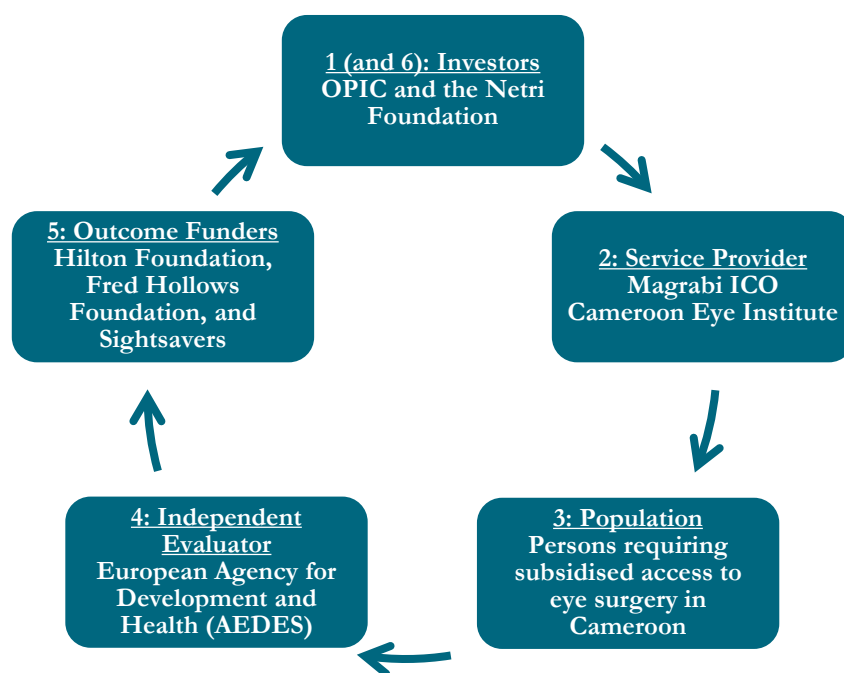
Source: Convergence, Palladium, and Bertha Centre 2018; Gustafsson-Wright et al. 2017

3.3 Cameroon Cataract Bond

The Cameroon Cataract Bond launched in January 2018 to provide five years of funding towards improving eye health in Cameroon. The DIB funds activities at the Magrabi ICO Cameroon Eye Institute, a new hospital in Yaoundé, Cameroon.⁸ The Cameroon Cataract Bond fund the hospital’s use of an approach to providing eye surgeries based on the Aravind Eye Care System, an effective model implemented in India that improved access to eye surgery through cross-subsidised pricing, high service volume, and revenue diversification strategies. The DIB is expected to provide access to free or discounted eye surgery for over 18,000 patients who otherwise would not be able to afford it (Oroxom, Glassman, and McDonald 2018).

⁸ ICO - International Council of Ophthalmology.

Figure 5. Organisations implementing and completing the Cameroon Cataract Bond



Based on Figure 1, "Steps Involved in Implementing and Completing a DIB"

The Fred Hollows Foundation, an outcome funder, began research into financing approaches for cataract surgeries in 2013, and that was the start of what has become the Cameroon Cataract Bond. The DIB’s outcome funders are the Hilton Foundation, Fred Hollows Foundation, and Sightsavers. The service provider is the Magrabi ICO Cameroon Eye Institute, with guidance from the Africa Eye Foundation. The private investors are the United States Overseas Private Investment Corporation (OPIC) and the Netri Foundation. Total upfront investment for the Utkrisht Impact Bond is US\$2million and total outcome funding is US\$2.5million (table 8). A recent CGD working paper provides a comprehensive overview of the process involved from concept to implementation for the Cameroon Cataract Bond (Oroxom, Glassman, and McDonald 2018).

Table 8. Cameroon Cataract Bond: Key information

Location	Focus	Upfront Investment	Outcome Funding	Interest Payment (Max)
Yaoundé, Cameroon	Eye surgeries	US\$2,000,000	US\$2,500,000	8%

Source: Convergence, Palladium, and Bertha Centre 2018

No private investor money can be lost in the Utkrisht Impact Bond; investors will receive 100 percent of their upfront investment back regardless of outcomes. Only investors’ interest payments in the DIB are at risk. If outcomes are achieved, private investors will receive up to 8 percent interest as a financial return on their investment (table 8). OPIC, which provided 87.5 percent of upfront investment in the DIB, can lose up to 50 percent of their interest payments if all outcomes (#1, #2, and #3 in table 9) are not achieved. The

Netri Foundation, which provided 12.5 percent of upfront investment, can lose up to 100 percent of their interest payments if all outcomes are not achieved. In practical terms, the DIB investment functions as a concessional loan where interest payments are tied to outcomes.

DIB outcome payments were negotiated by DIB outcome funders and private investors based on statistical modelling using historical performance data from the Africa Eye Foundation and external technical advice (Oroxom, Glassman, and McDonald 2018). The European Agency for Development and Health (AEDES) will independently evaluate and verify the achievement of DIB outcomes. The Cameroon Cataract Bond’s outcomes include surgery volume (#1), World Health Organization standards for cataract surgeries⁹ (#2), and financial sustainability of the Magrabi ICO Cameroon Eye Institute (#3). Outcome payments will be transferred to private investors in two stages—three years and five years after project launch. The Africa Eye Foundation will pay a portion of outcome payments to investors if outcomes are not met. The Magrabi ICO Cameroon Eye Institute will also receive a bonus performance payment if 40 percent of cataract surgery patients are in the bottom two income quintiles in Cameroon (Oroxom, Glassman, and McDonald 2018).

Table 9. Cameroon Cataract Bond: Outcomes

	Outcome	Evaluation Method	Target	Allocated Outcome Payment
#1	Total volume of completed cataract surgeries	Reporting and evaluation	Year 3: 7,000 cataract surgeries Year 5: 18,000 cataract surgeries	<i>Outcome payment contingent on meeting all target</i>
#2	Annual rate of surgeries with a “good outcome”	Reporting and evaluation	More than or equal to 50% of annual surgeries	<i>Outcome payment contingent on meeting all targets</i>
#3	Hospital displays financial sustainability	Reporting and evaluation	Hospital records a net profit within 5 years of opening	<i>Outcome payment contingent on meeting all target</i>

4. Comparison of Development Impact Bonds Targeting Health Outcomes

Three ongoing DIBs target improved health outcomes across five countries: the Humanitarian Impact Bond, the Cameroon Cataract Bond, and the Utkrisht Impact Bond.¹⁰

⁹ One example is achievement of uncorrected visual acuity of 6/18 among over 80 percent of patients (Oroxom, Glassman, and McDonald 2018).

¹⁰ The Humanitarian Impact Bond and the Cameroon Cataract Bond are colloquial titles. These funding structures are officially titled the Programme for Humanitarian Impact Investment and the Cameroon Cataract Development Impact Loan (Oroxom, Glassman, and McDonald 2018). “Utkrisht” is a Hindi expression for “excellence,” and the Utkrisht Impact Bond is sometimes referred to as the “Rajasthan DIB” or the “Utkrisht Bond” (United States Agency for International Development 2017).

These projects could be templates for future DIBs and may offer insights in the future about more effective ways to fund health services through overseas development assistance and philanthropic funding. The three health DIBs involve a total of US\$26.5 million in upfront investment and aim to impact the health of at least 31,600 people. These health DIBs cumulatively amount to US\$38.1 million of the nearly US\$55 million in outcome funds allocated to DIBs as of December 2018. For comparison, between 2007 and 2016, the World Bank's Health Results Innovation Trust Fund (HRITF) spent almost US\$2.5 billion on the implementation and evaluation of 35 RBF programmes across 29 LMICs (Chi et al. 2018). The HRITF pays providers based on the verification that the provider has met pre-agreed indicators of improved coverage and quality of maternal and child health services.

Each of the three health DIBs focus on health service delivery, but incorporate different stakeholder, implementation, and outcomes structures.

4.1 Stakeholders

No organisation is involved in more than one DIB targeting health outcomes. This includes outcome funders, private investors, and service providers, as well as organisations providing technical support. However, some organisations are involved in DIBs in other sectors. The UBS Optimus Foundation is a private investor in the Educate Girls DIB and the Utkrisht Impact Bond, while the UK Department for International Development (DFID) is an outcome funder for both the Humanitarian Impact Bond and the Village Enterprise DIB in Kenya and Uganda, and implementation and evaluation support to the Quality Education India DIB (Department for International Development 2018a; Government Outcomes Lab 2018b; Quality Education India 2018).

Outcome funders for the health DIBs include public sector, private sector, philanthropic, and non-governmental organisations. The role of these outcome funders in the DIB design and implementation, and the structure of outcome payments, varies across the health DIBs. Only the Humanitarian Impact Bond has different outcome funders targeting different outcomes; La Caixa Foundation will pay for the construction of new rehabilitation centres, and the rest of the Humanitarian Impact Bond's outcome funders will pay for rehabilitation recipients achieving mobility. The Utkrisht Impact Bond's stakeholder engagement places a unique emphasis on local government involvement; Palladium actively engaged the government of Rajasthan in the DIB during the design process. Though the Rajasthan government is not directly involved in the Utkrisht Impact Bond, Palladium and other stakeholders envision that the local government can lead a follow-up project to the DIB and adapt learnings from the DIB's approach to health facility quality improvement (Convergence, Palladium, and Bertha Centre 2018).

4.2 Implementation

The three health DIBs have similar implementation approaches, with each DIB replicating or scaling an existing approach to healthcare service delivery. The Humanitarian Impact Bond expands the existing ICRC Physical Rehabilitation Programme and the Cameroon

Cataract Bond adapts the existing Aravind Eye Care System. The Utkrisht Impact Bond catalyses and scales NGO-led assistance to improve the quality standards of private health facilities.

Providing support for an active and adaptive performance management system is one of the core rationales behind using a DIB (Center for Global Development and Social Finance 2013). Performance management systems provide real-time information to service providers and other DIB stakeholders, based on routine data collection, about project processes and output indicators compared to forecasts and can direct providers towards ways to improve service provision and peoples' outcomes. The value of such systems is backed by the results of the Educate Girls DIB's overhaul of its intervention strategy in the second and third year of the project. Educate Girls developed and tested a new intervention strategy that addressed service gaps and inefficiencies in their model of education provision. This process would not have been possible without the granular data and emphasis on routine assessment of services collected in a performance management system that was prioritised by the Educate Girls DIB's flexible upfront funding and emphasis on outcomes (ID Insight 2018).

Each health DIB has a performance management system designed to support project implementation and monitoring progress towards achieving the DIB's outcomes. The Utkrisht Impact Bond has one structured similarly to the system in the Educate Girls DIB (Convergence, Palladium, and Bertha Centre 2018). The Humanitarian Impact Bond's system, called the "Digital Centre Management Tool," is also designed to be a prototype for performance management systems elsewhere. If the Humanitarian Impact Bond achieves its outcomes and reaches improved staff efficiency ratios (outcome #2) at new centres, the ICRC service will roll out the Digital Centre Management Tool worldwide in Physical Rehabilitation Program centres already operating in other countries (Government Outcomes Lab 2018c).

4.3 Outcomes

Each of the health DIBs makes interest payments to private investors that are contingent on achieving outcomes. Calculating these payments involves a mixture of outcome and cost estimations based on historical data analysis and stakeholder-negotiated outcome prices and financial risk sharing. The Humanitarian Impact Bond is the only health DIB where all private investors have financial returns that are contingent on outcomes. In the Utkrisht Impact Bond, 73 percent (US\$3.5million) of private investment is grant money from the UBS Optimus Foundation and 100 percent (US\$2million) of investment in the Cameroon Cataract Bond will be returned to private investors, only the interest payments are at risk. Maximum interest payments differ across the three health DIBs, offering total financial returns on upfront investments by all investors of 7 percent (Humanitarian Impact Bond), 8 percent (Utkrisht Impact Bond) and 15 percent (Utkrisht Impact Bond).

It is not possible to evaluate how any health DIB estimated the value of interest payments that will be paid to investors if outcomes are achieved. No health DIB has publicly available information which outlines calculations for the size or value of expected outcomes, or even the costs of implementing the services which the health DIBs fund. A published figure for

internal rate of return is only available for the Utkrisht Impact Bond (~7.1 percent). Among all seven DIBs implemented as of December 2018, only the Educate Girls DIB has some of this information in the public domain (Instiglio 2015). The value of outcome payments for the Cameroon Cataract Bond changed during the DIB's design stages, as different prospective private investors negotiated with outcome funders (Oroxom, Glassman, and McDonald 2018). There is also a lack of information on how outcome payments are negotiated and change over time, evolving from estimates of costs or estimates of outcome value for money to being negotiated as contracted outcome payments.

The three health DIBs all include financial incentives for service providers. The structure of these incentives differ between the three DIBs, but all are similar to those used in more established results based financing approaches, such as the previously mentioned World Bank's Health Results Innovation Trust Fund (Chi et al. 2018). In the Cameroon Cataract Bond, providers only carry upside financial risk; outcome funders will pay the Magrabi ICO Cameroon Eye Institute a bonus payment for targeting low-income patients. In the Humanitarian Impact Bond, providers only carry downside financial risk; the ICRC will pay for 10 percent any investment lost if minimum targets are not met. If targets are met or exceeded, the ICRC will not receive a bonus payment. In the Utkrisht Impact Bond, service providers carry both upside and downside financial risk; HLFPPPT and PSI, the service providers, provided US\$0.5million (10.4 percent) each of the upfront investment in the DIB and will either lose or gain money based on the success of their efforts to improve quality standards at private medical facilities in Rajasthan.

4.4 Could DIBs Shift the Paradigm of Health Project Funding?

The 2013 report of the Center for Global Development's Development Impact Bond Working Group outlined three ways DIBs can shift the paradigm of how social programmes are funded. Using this framework, we list in table 10 whether the health DIBs meet these criteria. Only the Humanitarian Impact Bond completely meets all the key criteria—to leverage private capital, introduce investor incentives, and create sustained funding.

Table 10. Health DIBs and shifting the paradigm of funding for public services

Criteria	Humanitarian Impact Bond	Cameroon Cataract Bond	Utkrisht Impact Bond
#1 Private Capital Does the DIB leverage private capital to address market failures traditional funders cannot, due to political, financial, or operational constraints?	<u>Yes</u> <i>US\$27.6m in private capital</i>	<u>Yes</u> <i>US\$2.5m in private capital</i>	<u>Yes</u> <i>US\$3.5m in private capital¹¹</i>
#2 Investor Incentives Does the DIB introduce incentives for investors to support the performance of implemented projects, because their returns are tied to the success of projects?	<u>Yes</u> <i>Investment and interest at risk</i>	<u>Somewhat</u> <i>Interest at risk</i>	<u>Somewhat</u> <i>Some private investors do not bear financial risk</i>
#3 Sustained Funding Does the DIB create incentives to fund programmes over a longer period (5-10 years) and allow service providers to create the requisite foundations to scale up interventions?	<u>Yes</u> <i>5 years</i>	<u>Yes</u> <i>5 years</i>	<u>Somewhat</u> <i>3 years</i>

Each health DIB engages private investors and expands potential project financing through private capital. The Humanitarian Impact Bond and Cameroon Cataract Bond financially incentivise all private investors to support the performance of implemented projects via outcome contingent returns. The Utkrisht Impact Bond gives financial incentives to the organisations providing 27 percent of the DIB’s upfront investment. The rest, provided by the UBS Optimus Foundation, is grant money and cannot be recouped as financial returns to private investors. Instead, the Utkrisht Impact Bond interest payments are pre-allocated for further grant making. This may still incentivise investors to support project performance, due to non-financial incentives to create greater grant making funds for future projects. The Humanitarian Impact Bond and Cameroon Cataract Bond will last five years (the longest funding period of any DIBs launched to date), and the Utkrisht Impact Bond will last three years.

¹¹ Supplemented by US\$1.3m from Palladium, PSI, and HLFPPPT.

5. The Future for Development Impact Bonds Targeting Health Outcomes

5.1 Future Projects

There are reportedly eight more health DIBs in planning stages and proposals for at least a dozen health system challenges have referred to DIBs a potential funding structure. There is growing global interest in impact bonds among outcome funders, service providers, private investors, and organisations offering technical support. This is reflected in formal meetings and moves by international organisations to investigate use of the impact bond model.

In January 2018 the Impact Bonds Working Group launched in Zurich, Switzerland at a social impact bonds conference co-hosted by the Swiss government, the Inter-American Development Bank, and the UBS Optimus Foundation (State Secretariat for Economic Affairs (SECO) 2018).¹² The Impact Bonds Working Group includes over 30 international and multilateral organisations involved in financing and running public services through overseas financial finance and philanthropy. The objective of the working group is to design strategies to support members' use of impact bonds and related outcome based financing structures at scale (Impact Bonds Working Group 2018b). This may include collaborative platforms for sharing the information and access to technical capacities for evaluating and implementing a DIB.

In August 2018, UNICEF and Save the Children released separate consultancy tenders for staff to evaluate the organisations' use of DIBs as a financing structure (Relief Web 2018; UNICEF 2018). UNICEF already engages in impact investing through the UNICEF USA Bridge Fund, which supports humanitarian assistance through shorter procurement times and providing financial continuity for service provision (UNICEF USA 2017). In September 2018, Save the Children released a report that recommended better evidence and coordination around what features work well for DIBs (Wainer 2018).

Furthermore, there is increasing domestic interest in LMICs in the impact bond funding model (Gustafsson-Wright et al. 2017). In addition to local government engagement in the Utkrisht Impact Bond and the Quality Education DIB, there are locally led SIBs targeting improved employment in Colombia and supporting early-child education outcomes in South Africa (Velosa 2017; Boggild-Jones and Gustafsson-Wright 2018).

5.1.1 Planned Projects

Eight DIBs that are reportedly in planning stages focus on improving health outcomes. Table 11 summarises their location, the proposed intervention, planned outcome funding and sources of further information. These projects cover a range of public health and service

¹² The Impact Bonds Working Group has received financial support from DFID, the Swiss State Secretariat for Economic Affairs, and the UBS Optimus Foundation. The Ministry of Foreign Affairs of Belgium hosted the first group workshop in mid-May (Impact Bonds Working Group 2018a).

delivery interventions and include several countries where there currently no implemented DIBs. Table 11 may list projects no longer in planning phase and may omit others that are being planned; this is due to the lack of public reporting or open registration of both SIBs and DIBs (Iovan, Lantz, and Shapiro 2018).

It is difficult to assess what has happened during design and contracting processes that has led to the shelving of DIBs. This is due to a lack of public reporting by those funding and designing DIBs. For example, projects targeting DIB funding for sleeping sickness prevention in Nigeria and nutrition in Mozambique were planned but are on hold (Oroxom, Glassman, and McDonald 2018; Department for International Development 2018b). Without obtaining privately held documents, it is not possible to understand why these DIBs were not launched. This restricts expansion of an evidence base that could inform how to evaluate the feasibility of using a DIB and could produce bias in discussions about DIBs, which echoes problems in clinical research when studies with null or negative findings are not published (Higgins and Green 2011).

Table 11. Location, intervention, and outcome funding (health DIBs in planning)

Project Location	Intervention	Outcome Funding	Further Information
Cameroon	Kangaroo mother care services	US\$3.6 million	(Social Finance 2018a)
Chad	Rabies control via canine vaccination	<i>Not reported</i>	(Welburn, Coleman, and Zinsstag 2017)
Dakar, Senegal; Kigali, Rwanda	Safe collection and transport of faecal sludge	<i>Not reported</i>	(Social Finance 2018c)
Ethiopia	Newcastle Disease prevention	US\$15 million	(Instiglio 2018)
India	Breast cancer treatment	<i>Not reported</i>	(Access Health International 2018)
Mozambique	Malaria prevention	<i>Not reported</i>	(Gustafsson-Wright et al. 2017; Clinton Foundation 2018)
West Bank, Palestine	Type II Diabetes prevention in refugee camps	<i>Not reported</i>	(The Portland Trust 2018)
Tajikistan	Improving access to safe drinking water	<i>Not reported</i>	(Oxfam 2017)

5.1.2 Applying DIBs to Other Health Systems Challenges

DIBs have been proposed to address various health systems challenges due to their potential for spurring innovative approaches to systemic problems, despite the lack of evidence on how DIBs work in the health sector. We list below a selection of these challenges, including improvements to supplies of medicines; effectiveness of treatment programs; and supports for existing financing instruments, such as the Global Fund.

Health system functions linked to DIBs*

- Cancer treatment
- Healthcare transition for countries graduating from aid
- Hepatitis B and C prevention and treatment
- HIV treatment and support
- Humanitarian assistance
- Mental health treatment and support
- mHealth
- Neglected tropical diseases prevention and treatment
- Nutrition
- Research and development in biomedical science
- Support for the Global Fund
- Tuberculosis prevention and treatment

* Full list of sources in Appendix B

Given their focus on the routine recording and use of data, DIBs could also support the testing and roll out of better health information systems in resource constrained settings. For instance, the Humanitarian Impact Bond is already doing this by testing a new Digital Centre Management Tool as part of the DIB (Government Outcomes Lab 2018c). One further way to connect improvement in information systems with health outcomes is improving monitoring on quantity and cost of essential medicines. Improving this information would improve medicine procurement activities in settings where routine data are mostly absent (Center for Global Development 2018).

5.2 Future Evidence

Conclusions about the effectiveness of DIBs suffer from a lack of quantity and quality of available documentation and evaluation of DIBs to date. Only two have reached the outcome payment stage: the Asháninka Impact Bond and Educate Girls DIB. Both are small compared to the five ongoing DIBs, in both financial terms and the size of outcomes targets. It is not yet possible to conclude how operating at larger scale will affect the utility of the DIB model of funding public services.

The quality of evidence on DIBs is hindered by what is included in publicly available reports. Evaluations of the Asháninka Impact Bond and Educate Girls DIB state that DIBs have good potential to be an effective financing option, yet independently assessing such statements is challenging due to the mixed availability of information. There is better quality evidence available about the Educate Girls DIB than the Asháninka Impact Bond. ID Insight, the independent evaluator of the Educate Girls DIB published a report detailing their evaluation of the DIB's impact, including categorised data on student outcomes over the course of the project (ID Insight 2018). There is no such document available for the Asháninka Impact Bond. ID Insight also took several steps to improve the robustness of the findings from the Educate Girls DIB, such as using a cluster randomised controlled trial for

interventions and not revealing to assessors whether their allocated schools were receiving the DIB's intervention or not. However, there is no analysis available about project costs for either completed DIB. Without cost information to evaluate alongside impact information, it is not possible to establish whether a DIB was good value for money.

Further evidence will hopefully emerge as the five implemented DIBs reach completion between 2020 and 2022. This evidence base will expand as additional DIBs launch. It is not clear, based on available documents, how the current crop of health DIBs will be evaluated and reported. Previous publications have evaluated and recommended ways to improve the design, contracting and implementation of DIBs (Oroxom, Glassman, and McDonald 2018; Wainer 2018; Center for Global Development and Social Finance 2013; Gustafsson-Wright et al. 2017). We build on these recommendations by offering three ways to support future evaluation and implementation of DIBs:

1. Publish planning and evaluation documents
2. Create and use consistent reporting guidelines
3. Allocate funding to evaluate impact and value for money

5.2.1 Publish planning and evaluation documents

All stakeholders involved in the conceptualisation, design, and implementation of DIBs can benefit from better transparency. Beyond the fact that many outcome funders are government agencies and have a duty to publish work funded using public money, organisations evaluating DIBs for potential use or independent research purposes would benefit from more comprehensive release of documents that explain why and how a DIB is used. It is difficult to take stock and make conclusions about DIBs because of poor publication rates of relevant information (Iovan, Lantz, and Shapiro 2018). There is only one public feasibility study of a health DIB, which looks at using a DIB to fund eradication of canine rabies in Chad (Anyiam et al. 2017). The study provides a full cost estimate for canine rabies vaccination and estimates several DIB repayment scenarios.

Impact intermediaries host project databases, but the data are often incomplete, have uncertain update schedules, and are not straightforward to export for analysis (Instiglio 2018; Social Finance 2018b). There are more accessible independent databases focused on SIBs in the UK and payment for success in the US (Government Outcomes Lab 2018d; Nonprofit Finance Fund 2018). However, there is no comparable database for DIBs and no database exists for SIBs or DIBs that hosts information about project structures, impacts, and costs. A database that includes cost and impact information of multiple projects could take a similar shape to the financing data dashboards hosted by the World Bank's Health Results Innovation Trust Fund (RBF Health 2018). A database for DIB evaluations could be built using the format of the Registry for International Development Impact Evaluations hosted by the International Initiative for Impact Evaluation (3ie) (International Initiative for Impact Evaluation 2018).

5.2.2 Create and use consistent reporting guidelines

All stakeholders involved in the conceptualisation, design, and implementation of DIBs could benefit from better reporting guidelines. There is no collectively agreed way to assess if a DIB is impactful or is good value for money *compared* to another funding structure such as grants or RBF. Rather, all implemented DIBs evaluate success based on historical baselines or control groups not receiving services. For example, the ID Insight evaluation of the results of the Educate Girls DIB assesses whether school-level education and enrolment support was impactful compared to schools not receiving additional support. Further guidance on how to account for the role of private investors would also be useful.

For DIBs targeting health outcomes, there is existing technical guidance which could aid the development of manuals and checklists for evaluating the expected and actual impact and value for money of DIBs. The Consolidated Health Economic Evaluation Reporting Standards (CHEERS) and the International Decision Support Initiative (iDSI) Reference Case for Economic Evaluation are two widely referenced checklists that guide assessments of the cost-effectiveness of healthcare interventions (Wilkinson et al. 2016; Husereau et al. 2013). Further effort is needed to account for elements specific to using a DIB, such as the effects of outcomes-based payments, transaction costs, and non-financial returns to investors. There are independent in-depth resources for SIBs which could offer a starting point, including documents that outline how to set, price, and evaluate the SIB outcomes (Government Outcomes Lab 2018e). There is also increasing pressure to address the lack of guidance for evaluating value for money of RBF programmes, which could result in information that informs more consistent evaluations of DIBs (Chi et al. 2018).

5.2.3 Allocate funding to evaluate impact and value for money

All stakeholders involved in the design, funding, and implementation of DIBs could benefit from better funded evaluations of DIBs. Building the evidence base on DIBs depends on sustained and sufficient financial support (Oroxom, Glassman, and McDonald 2018; Center for Global Development and Social Finance 2013). It is not clear what ex-ante impact estimates and modelling of costs health DIBs involve, but these activities require adequate financial support to collect appropriate baseline data and rigorously assess available evidence. By design, DIBs require independent ex-post evaluation, but the emphasis may vary between the minimum required for verifying outcomes and paying investors versus embedding evaluations throughout the design and implementation process.

Including project evaluations in DIB contracts and commissioning independent reviews of DIBs are two ways to direct funding to impact and value for money evaluation. There are examples of these approaches among the health DIBs. The Utkrisht Impact Bond has US\$1million set aside by outcome funders for the evaluation of the project, which represents 11.1 percent of its total outcome funder commitments (US\$9million). It is not clear how much funding is set aside for the Humanitarian Impact Bond or the Cameroon Cataract Bond. Notably, DFID, one of the Humanitarian Impact Bond's outcome funders, has already commissioned independent research to evaluate the implementation of three pilot DIBs: the Humanitarian Impact Bond, the Village Enterprise DIB and the Quality Education DIB (Department for International Development 2018a). Going a step further,

outcome funders could tie project funding to mandated publication of plans and evaluations and use of reporting guidelines (recommendations #1 and #2).

6. Conclusion

The small, but expanding, number of health DIBs shows the interest in piloting this innovative financing structure. DIBs offer the attractive prospect of leveraging private capital, incentivising performance, and accessing sustained funding. Whether that prospect reliably converts into value for money remains unclear based on available evidence.

Current and future evidence on DIBs risks being of limited quality and scope if current trends continue. We offer three recommendations to address this problem: (1) publish plans and evaluations; (2) create and use consistent reporting guidelines; and (3) allocate funding to evaluate impact and value for money. Agreed principles for evaluating prospective and implemented DIBs can create foundations for comparability among DIBs and with other funding structures. Independent documentation and evaluation will create reliable evidence to act upon.

Without collective understanding the potential advantages and pitfalls, DIBs will remain a use of money that is interesting, but not necessarily effective.

7. References

- Access Health International. 2018. "Innovative Funding Models for Cancer Treatment in Asia: A Landscape Study of Funding Trends and Innovations." <https://accessh.org/wp-content/uploads/2018/07/innovative-fundraising-models-report.pdf>.
- Aidspan. 2018. "The Global Fund Explores the Use of Impact Bonds and Social Success Notes."
- Anyiam, Franziska, Monique Lechenne, Rolande Mindekem, Assandi Oussigéré, Idriss Oumar Alfaroukh, Celine Mbilo, Daugla Doumagoum Moto, Paul G Coleman, Nicole Probst-Hensch, and Jakob Zinsstag. 2017. "Cost-Estimate and Proposal for a Development Impact Bond for Canine Rabies Elimination by Mass Vaccination in Chad." *Acta Tropica* 175. J. Zinsstag, Swiss Tropical and Public Health Institute, PO Box, Basel CH-24002, Switzerland. E-mail: jakob.zinsstag@unibas.ch: Elsevier B.V.: 112–20. doi:<http://dx.doi.org/10.1016/j.actatropica.2016.11.005>.
- Atun, Rifat, Sachin Silva, Mthuli Ncube, Anna Vassall, Atun R., Silva S., Ncube M., et al. 2016. "Innovative Financing for HIV Response in Sub-Saharan Africa." *Journal of Global Health* 6 (1). United Kingdom: Edinburgh University Global Health Society: 10407. doi:10.7189/jogh.06.010407.
- Avery, Helen. 2017. "Why Finance, Not Just Aid, Is the Key to Dealing with Humanitarian Crises." *Euromoney*, September. London: Euromoney Institutional Investor PLC. https://search.proquest.com/docview/1962315152?accountid=9630%0Ahttp://pmt-eu.hosted.exlibrisgroup.com/openurl/44LSE/44LSE_services_page?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&genre=unknown&sid=ProQ:ProQ%253Aabiglobal&atitle=Why+ fina.
- Beesabathuni, Kalpana. 2016. "Innovative Financing for Nutrition." *16 Sight and Life*, 53.
- Belt, John, Andrey Kuleshov, and Eline Minneboo. 2017. "Development Impact Bonds: Learning from the Asháninka Cocoa and Coffee Case in Peru." *Enterprise Development and Microfinance* 28 (1–2). Practical Action Publishing: 130–44. doi:10.3362/1755-1986.16-00029.
- Boggild-Jones, Izzy, and Emily Gustafsson-Wright. 2018. "A Landmark Month for Impact Bonds in Education." <https://www.brookings.edu/blog/education-plus-development/2018/09/25/a-landmark-month-for-impact-bonds-in-education/>.
- Center for Global Development. 2018. "Working Group on the Future of Global Health Procurement."
- Center for Global Development, and Social Finance. 2013. "Investing in Social Outcomes: Development Impact Bonds. The Report of the Development Impact Bond Working Group." <https://www.cgdev.org/publication/investing-social-outcomes-development-impact-bonds?callout=1-6>.
- Chi, Y-Ling, Mohamed Gad, Sebastian Bauhoff, Kalipso Chalkidou, Itamar Megiddo, Francis Ruiz, and Peter Smith. 2018. "Mind the Costs, Too: Towards Better Cost-Effectiveness Analyses of PBF Programmes." *BMJ Global Health* 3 (5). <http://gh.bmj.com/content/3/5/e000994.abstract>.
- Clinton Foundation. 2018. "Goodbye Malaria: Mozambique Malaria Performance Bond." <https://www.clintonfoundation.org/clinton-global-initiative/commitments/goodbye-malaria-mozambique-malaria-performance-bond>.

- Convergence, Palladium, and Bertha Centre. 2018. “The Utkrisht Impact Bond: Design Grant Case Study.”
https://thepalladiumgroup.com/download?file=AED_1516861800_30130file_upload_convergence_report.pdf%23Convergence+Report.pdf.
- Damme, P Van, D Lavanchy, G Hendrickx, and I Lodewyckx. 2016. “Innovative Financing Into Hepatitis B and C Prevention and Treatment in Low and Middle Income Countries.” *Vhpb.Org*. <http://www.vhpb.org/files/Innovative-financing-into-hepatitis-B.pdf>.
- Das, Ashis, Saji S Gopalan, and Daniel Chandramohan. 2016. “Effect of Pay for Performance to Improve Quality of Maternal and Child Care in Low- and Middle-Income Countries: A Systematic Review.” *BMC Public Health* 16 (1): 321.
doi:10.1186/s12889-016-2982-4.
- Department for International Development. 2018a. “DFID 8229 Independent Evaluation of the Development Impact Bonds (DIBs) Pilot Programme Call Down Contract Award.”
<https://devtracker.dfid.gov.uk/projects/GB-1-204722/documents>.
- . 2018b. “Social Impact Bond Pilot -Sleeping Sickness in Uganda.”
<https://devtracker.dfid.gov.uk/projects/GB-1-203604/>.
- Diek, Stephan, Marina van Geenhuizen, and Bart van Hulst. 2018. “Health Impact Bonds as a Novel Financial Arrangement in Healthcare Transition.” In *Cities and Sustainable Technology Transitions: Leadership, Innovation and Adoption*, 361. Edward Elgar Publishing.
- Fölster, Stefan. 2017. “Viral MHealth.” *Global Health Action* 10 (sup3). Taylor & Francis: 1336006.
- Fraser, Alec, Stefanie Tan, Kristy Kruithof, Megan Sim, Emma Disley, Chris Giacomantonio, Mylene Lagarde, Jennifer Rubin, and Nicholas Mays. 2018. “Evaluation of the Social Impact Bond Trailblazers in Health and Social Care.”
<http://piru.lshtm.ac.uk/projects/current-projects/social-impact-bonds-for-health-and-social-care.html#t3>.
- Government Outcomes Lab. 2018a. “An Introduction to Development Impact Bonds (DIBs).” <https://golab.bsg.ox.ac.uk/knowledge/basics/introduction-development-impact-bonds/>.
- . 2018b. “Case Studies: Educate Girls.” <https://golab.bsg.ox.ac.uk/knowledge/case-studies/educate-girls/>.
- . 2018c. “Humanitarian Impact Bond.” <https://golab.bsg.ox.ac.uk/knowledge/case-studies/humanitarian-impact-bond/>.
- . 2018d. “Projects Database.” <https://golab.bsg.ox.ac.uk/project-database/>.
- . 2018e. “Technical Guides.” <https://golab.bsg.ox.ac.uk/guidance/technical-guides/>.
- Gustafsson-Wright, Emily, Izzy Boggild-Jones, Dean Segell, and Justice Durland. 2017. “Impact Bonds in Developing Countries: Early Learnings from the Field.”
<https://www.brookings.edu/research/impact-bonds-in-developing-countries-early-learnings-from-the-field/>.
- Higgins, JPT, and S Green. 2011. “Cochrane Handbook for Systematic Reviews of Interventions.” *Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0*.
- Husereau, Don, Michael Drummond, Stavros Petrou, Chris Carswell, David Moher, Dan Greenberg, Federico Augustovski, Andrew H Briggs, Josephine Mauskopf, and Elizabeth Loder. 2013. “Consolidated Health Economic Evaluation Reporting

- Standards (CHEERS) Statement.” *The European Journal of Health Economics : HEPAC : Health Economics in Prevention and Care* 14 (3): 367–72. doi:10.1007/s10198-013-0471-6.
- ID Insight. 2018. “Educate Girls Development Impact Bond, Final Evaluation Report.” <https://golab.bsg.ox.ac.uk/knowledge/resources/educate-girls-final-report/>.
- Impact Bonds Working Group. 2018a. “Impact Bonds Working Group.”
- . 2018b. “Summary of Second All-Members Meeting.” www.ib-wg.com.
- Instiglio. 2015. “Design Memo: Educate Girls Development Impact Bond.” <http://instiglio.org/educategirlsdib/wp-content/uploads/2016/03/EG-DIB-Design-1.pdf>.
- . 2018. “Impact Bonds Worldwide.” www.instiglio.org/en/sibs-worldwide/.
- International Committee of the Red Cross. 2016. “Physical Rehabilitation Programme: Annual Report 2016.” <https://shop.icrc.org/physical-rehabilitation-programme-annual-report-2233.html>.
- International Initiative for Impact Evaluation. 2018. “Registry for International Development Impact Evaluations.” www.3ieimpact.org/en/evaluation/ridie/.
- Iovan, Samantha, Paula M Lantz, and Shoshana Shapiro. 2018. “‘Pay for Success’ Projects: Financing Interventions That Address Social Determinants of Health in 20 Countries.” *American Journal of Public Health* 108 (11). American Public Health Association: 1473–77. doi:10.2105/AJPH.2018.304651.
- KOIS Invest. 2017. “Special Edition Newsletter – Launching the World’s First Humanitarian Impact Bond with the ICRC.” https://docs.wixstatic.com/ugd/679693_99c86289da4f4a1b9d0849ad1b9d7a85.pdf.
- Manning, Richard, and Olivier Sterck. 2017. “Rethinking International and Domestic Financing for HIV in Low-and Middle-income Countries.” *Development Policy Review*. Wiley Online Library.
- Menil, Victoria De, and Amanda Glassman. 2015. *Missed Opportunities in Global Health: Identifying New Strategies to Improve Mental Health in LMICs*. Center for Global Development.
- Mnookin, Seth. 2016. “Out of the Shadows: Making Mental Health a Global Development Priority.”
- Nicholls, Alex, and Emma Tomkinson. 2015. “The Peterborough Pilot Social Impact Bond.” In *Social Finance*, edited by Alex Nicholls, Rob Paton, and Jed Emerson. Oxford University Press.
- Nonprofit Finance Fund. 2018. “Pay for Success - Projects.”
- Oroxom, Roxanne, Amanda Glassman, and Lachlan McDonald. 2018. “Structuring and Funding Development Impact Bonds for Health - Nine Lessons from Cameroon and Beyond.” <https://www.cgdev.org/publication/structuring-funding-development-impact-bonds-for-health-nine-lessons>.
- Overseas Private Investment Corporation. 2017. “Cameroon Cataract Development Impact Loan Offers Innovative Approach to Prevent Blindness.” <https://www.opic.gov/press-releases/2017/cameroon-cataract-development-impact-loan-offers-innovative-approach-prevent-blindness>.
- Oxfam. 2017. “From Service Delivery to Sustainable Water Management in Tajikistan.” <https://oxfamlibrary.openrepository.com/bitstream/handle/10546/620294/cs-from-service-delivery-tajikistan-100717-en.pdf?sequence=4&isAllowed=y>.

- Pauly, Mark V. 1968. "The Economics of Moral Hazard: Comment." *American Economic Review* 58 (3): 531–37. doi:10.2307/1813785.
- Pauly, Mark V, and Ashley Swanson. 2017. "Social Impact Bonds: New Product or New Package?" *The Journal of Law, Economics, and Organization* 33 (4): 718–60. <http://dx.doi.org/10.1093/jleo/ewx012>.
- Quality Education India. 2018. "Quality Education India Development Impact Bond." <http://www.qualityeducationindiadib.com>.
- RBF Health. 2018. "Results." <https://www.rbfhealth.org/results>.
- Relief Web. 2018. "Development Impact Bonds Project Consultant (Save the Children)." <https://reliefweb.int/job/2779749/development-impact-bonds-project-consultant#how-to-apply>.
- Sirohi, Bhawna, Kalipso Chalkidou, C S Pramesh, Benjamin O Anderson, Patrick Loehrer, Omar El Dewachi, Omar Shamieh, et al. 2018. "Developing Institutions for Cancer Care in Low-Income and Middle-Income Countries: From Cancer Units to Comprehensive Cancer Centres." *The Lancet Oncology* 19 (8). Elsevier: e395–406. doi:10.1016/S1470-2045(18)30342-5.
- Social Finance. 2018a. "Cameroon - Kangaroo Mother Care." <https://www.socialfinance.org.uk/projects/cameroon-kangaroo-mother-care>.
- . 2018b. "Social Impact Bond Database." <http://sibdatabase.socialfinance.org.uk>.
- . 2018c. "WASH in Rwanda and Senegal." <https://www.socialfinance.org.uk/projects/wash-rwanda-and-senegal>.
- Spiegel, Paul B. 2017. "The Humanitarian System Is Not Just Broke, but Broken: Recommendations for Future Humanitarian Action." *The Lancet*. Elsevier.
- State Secretariat for Economic Affairs (SECO). 2018. "Conference on Impact Bonds and Other Pay- for-Success Mechanisms: Pathways to Scale."
- The Portland Trust. 2018. "Development Impact Bonds for Palestine." <https://www.portlandtrust.org/projects/training-and-entrepreneurship/way-business>.
- UNICEF. 2018. "Consultancy: Private Sector Development Impact Bond Pilot, Financial Innovation Lab, Global Philanthropy, PFP." <http://jobs.unicef.org/cw/en-us/job/515517/consultancy-private-sector-development-impact-bond-pilot-financial-innovation-lab-global-philanthropy-pfp>.
- UNICEF USA. 2017. "Bridge Fund Brochure." https://www.unicefusa.org/sites/default/files/BF17_Brochure.pdf.
- United States Agency for International Development. 2017. "Utkrisht Impact Bond." <https://www.usaid.gov/cii/indiadib>.
- Velosa, Carolina González. 2017. "Bonos de Impacto Social: Cómo Colombia Innova En Los Programas de Empleo." *Banco Interamericano de Desarrollo: Factor Trabajo (Blog)*. <https://blogs.iadb.org/trabajo/2017/11/06/bonos-de-impacto-social-como-colombia-innova-en-los-programas-de-empleo/>.
- Wainer, Andrew. 2018. "Investing in Maternal and Child Health: Development Impact Bonds Potential and Early Learning." <https://www.savethechildren.org/content/dam/usa/reports/health/maternal-and-child-health-sept-2018.pdf>.
- Welburn, Susan C, Paul G Coleman, and Jakob Zinsstag. 2017. "Rabies Control: Could Innovative Financing Break the Deadlock?" *Frontiers in Veterinary Science* 4 (MAR).

- Division of Infection and Pathway Medicine, Edinburgh Medical School: Biomedical Sciences, College of Medicine and Veterinary Medicine, The University of Edinburgh, Edinburgh, United Kingdom: *Frontiers*: 32. doi:10.3389/fvets.2017.00032.
- West, Darrell M, John Villasenor, and Jake Schneider. 2017. "Private Sector Investment in Global Health R&D: Spending Levels, Barriers, and Opportunities."
- Wilkinson, Thomas, Mark J Sculpher, Karl Claxton, Paul Reville, Andrew Briggs, John A Cairns, Yot Teerawattananon, et al. 2016. "The International Decision Support Initiative Reference Case for Economic Evaluation: An Aid to Thought." *Value in Health* 19 (8). Elsevier: 921–28. doi:10.1016/j.jval.2016.04.015.
- World Bank Group. 2018. "Healthy Brain Bonds: Is This a Feasible Option?"
- World Health Organization. 2015. "Report of the WHO Strategic and Technical Advisory Group for Neglected Tropical Diseases."
- . 2018. "Ending TB: Invest Now or Pay Later." World Health Organization. Regional Office for South-East Asia.

Appendix A. Research Approach and Key Literature

This paper was informed by a scoping review of literature on development impact bonds and previous structured reviews of development impact bonds. The search was undertaken in July 2018 and updated over the course of research and drafting. Databases searched included Google Scholar, PubMed, Web of Science, Open Grey, and Scopus.

Key information which generated discussion for this study are outlined below. These include previous syntheses and case studies on impact bonds:

- Belt, J., Kuleshov, A. and Minneboo, E. (2017) *Development impact bonds: learning from the Asháninka cocoa and coffee case in Peru*. Enterprise Development and Microfinance.
- Center for Global Development and Social Finance (2013) *Investing in Social Outcomes: Development Impact Bonds. The Report of the Development Impact Bond Working Group*.
- Convergence, Palladium and Bertha Centre (2018) *The Utkrisht Impact Bond: Design Grant case study*.
- Fraser, A. et al. (2016) *Narratives of Promise, Narratives of Caution: A Review of the Literature on Social Impact Bonds*. Social Policy & Administration.
- Government Outcomes Lab (2018) *Humanitarian Impact Bond*.
- Gustafsson-Wright, E. et al. (2017) *Impact bonds in developing countries: Early learnings from the field*. Brookings Institute.
- ID Insight (2018) *Educate Girls Development Impact Bond, Final Evaluation Report*.
- Instiglio (2018) *Impact Bonds Worldwide*. (Database)
- Oroxom, R., Glassman, A. and McDonald, L. (2018) *Structuring and Funding Development Impact Bonds for Health - Nine Lessons from Cameroon and Beyond*. Center for Global Development.
- Social Finance (2018) *Social Impact Bond Database*. (Database)
- Wainer, A. (2018) *Investing in Maternal and Child Health: Development Impact Bonds Potential and Early Learning*. Save the Children.

Appendix B. Concept Areas for Development Impact Bonds Targeting Health Outcomes

Health Systems Function	Further Information
Cancer treatment	(Sirohi et al. 2018)
Healthcare transition for countries graduating from aid	(Diek, van Geenhuizen, and van Hulst 2018)
Hepatitis B and C prevention and treatment	(Damme et al. 2016)
HIV treatment and support	(Atun et al. 2016; Manning and Sterck 2017)
Humanitarian assistance	(Spiegel 2017; Avery 2017)
Mental Health treatment and support	(De Menil and Glassman 2015; Mnookin 2016; World Bank Group 2018)
mHealth	(Fölster 2017)
Neglected tropical disease prevention and treatment	(World Health Organization 2015)
Nutrition	(Beesabathuni 2016)
Research and development in biomedical science (medicines)	(West, Villasenor, and Schneider 2017)
Support for the Global Fund	(Aidspan 2018)
Tuberculosis prevention and treatment	(World Health Organization 2018)