



## Measuring spillovers matters

Health interventions have target beneficiaries but they may also benefit or harm those who have not received the intervention. When this happens, researchers call it a spillover effect and it can happen in other types of development interventions too. Health-related spillovers are particularly important to measure and understand the overall impact of an intervention accurately, because improving people's well-being is at stake. For example, children who are not vaccinated may experience lower rates of contracting infectious diseases due to being in close proximity to those who have been vaccinated.

The presence (or lack of) of spillovers and whether they are positive or negative has implications for people's health and for benefit-cost ratios, which may justify or necessitate programmatic changes.

### Spillovers can be positive or negative

A study in Ethiopia found an almost three-fold reduction in the odds of contracting trachoma infection among people who were living in areas where mass administration of azithromycin occurred, but they themselves had not received the drug. An evaluation in Malawi found that providing conditional cash transfers to teenage girls might adversely affect the psychological well-being of girls who did not receive a transfer.

### Main findings

- Interventions like **cash transfers, insecticide-treated bed nets, water and sanitation, and vaccination** had positive spillovers
- For other interventions, the spillovers are either **limited or inconsistent** across different studies.
- **Lack of critical mass of high-quality studies** reporting on spillovers around a particular intervention, except vaccination
- **Poor reporting and lack of standardisation in measuring spillovers** make it difficult to compare similar interventions and outcomes.

## Systematic review of health-related spillovers

A recent systematic review synthesised evidence from various health-related interventions in low- and middle-income countries, including cash transfers, drug administration for parasite control, health education, HIV and AIDS, insecticide-treated bed nets, maternal, neonatal and child health, school-feeding, vaccines, and water, sanitation and hygiene across low- and middle-income countries. The review looked at spillovers on a variety of health-related outcomes, such as disease progression, health behaviour change, healthcare visits and voluntary HIV counselling and testing.



THE WORLD BANK

### Summary of findings

#### ■ Cash transfers

Spillovers from cash transfers appeared to be positive. Cash transfer programmes increased preventive health screenings and financial inclusion among non-beneficiaries by altering prevalent social norms. However, the quality of evidence from these studies is low.

#### ■ Health education

Community-based programmes for child health and nutrition showed no spillover effects on key child growth indicators. Findings for health literacy initiatives on sexually transmitted diseases, and HIV and AIDS in school-based programmes were inconsistent.

#### ■ Insecticide-treated bed nets

Studies found positive spillovers of health outcomes for individuals in nearby areas that did not receive the subsidised or free treated bed nets.

#### ■ Mass drug administration for parasite control

Studies found limited spillover effects in school-based deworming programmes in Kenya and trachoma control in Ethiopia.

#### ■ Water and sanitation

These interventions showed moderate spillover effects, which led to increased access to and awareness of the benefits of using clean water, and general improvement in sanitation and health outcomes.

#### ■ Vaccines

Vaccination interventions had significant spillover effects that reduced disease burden among unvaccinated individuals. The spillover effect was stronger for interventions with higher vaccine coverage, such as cholera and polio.

#### ■ Other interventions

Spillover effects for programmes aimed at empowering women and improving maternal health were inconsistent. Fertility rates among non-beneficiary populations showed improvement. There were no spillover effects noted for school-feeding programmes, however.

With the exception of vaccination, there is no critical mass of high-quality studies including spillovers on any of the reviewed health interventions.

## Implications for policy, programming and research

### Policy

Authors found insufficient high-quality evidence to make policy recommendations.

### Programming

With the exception of vaccination, there is no critical mass of high-quality studies including spillovers on any of the reviewed health interventions. Since spillovers in vaccination programmes are well-studied and understood, it is not surprising that governments and other development actors launch regular, large-scale vaccination drives to achieve desirable health outcomes among both beneficiary and non-beneficiary populations.

### Research

This review fills a significant void in research on health-related spillovers. The authors recommend ways to improve the evidence base on spillovers by defining estimation methods in research protocols and estimating the scale of spillovers and possible mechanisms. Greater standardisation of methods for measuring spillovers and improved design, analysis and reporting of them can help produce evidence that accurately estimates the impact of an intervention and aid policymaking. Systematic reporting of spillovers will allow for greater comparability of data between studies looking at similar interventions and outcomes. Measuring spillovers can increase the cost of impact evaluations, so it is important for funders to consider providing additional resources, especially in cases where preliminary evidence suggests the probability of programme spillovers to non-beneficiaries.

## Potentially wider malaria prevention effects

A study in Kenya found evidence of notable reductions in malaria and anaemia among individuals who did not receive free insecticide-treated bed nets (ITNs) and who lived within 300 metres of villages that did receive them. Reduced malaria infections among individuals using ITNs possibly led to reduced transmission of malaria to nearby areas.





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## What is a systematic review?

3ie-funded systematic reviews use rigorous and transparent methods to identify, appraise and synthesise all of the qualifying studies and reviews addressing a specific review question. Review authors search for published and unpublished research and use a theory-based approach to determine what evidence may be generalised and what is more context specific. Where possible, cost-effectiveness analysis is done. The result is an unbiased assessment of what works, for whom, why and at what cost.

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## About this systematic review

This brief is based on *The identification and measurement of health-related spillovers in impact evaluations: a systematic review* by Benjamin Chung *et al.* It synthesises evidence from 54 studies conducted in 21 countries and published between 2010 and 2014. The selection criteria include quantitative studies in L&MICs measuring health outcomes and clearly articulating a comparison group to study the impact of an intervention, both direct and spillover.

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## About 3ie

The International Initiative for Impact Evaluation (3ie) is an international grant-making NGO promoting evidence-informed development policies and programmes. We are the global leader in funding, producing and synthesising high-quality evidence of what works, for whom, why and at what cost. We believe that high-quality and policy-relevant evidence will help make development more effective and improve people's lives.



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