

Draft for discussion

HEALTH FINANCING

Evidence from systematic reviews to inform decision making regarding financing mechanisms that improve access to health services for poor people

A policy brief prepared for the International Dialogue on Evidence-Informed Action to Achieve Health Goals in Developing Countries (IDEAHealth)

Khon Kaen, Thailand

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Preface

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Without evidence-informed action, health-related Millennium Development Goals as well as those of individual nations are unlikely to be achieved. Health policies are influenced by a variety of factors – values and beliefs, stakeholder power, institutional constraints, and donor funding flows, among others – and research evidence *needs* to be one of the critical factors taken into account. In contexts where resources are most scarce, it is arguably even more important that research evidence informs policy-making in order to ensure the wise use of limited resources. Unfortunately, evidence-informed action is rare. Research evidence is lacking for a number of policy questions and impact evaluations still need to be a more integral part of policy implementation. Where research evidence exists for policy questions, it is not always in a form that it is easy for policy-makers and stakeholders (including civil society groups) to acquire, assess or use. Research evidence may be scattered across numerous reports and articles, or difficult to assess in terms of its quality. It may also have been conducted in contexts which may not be similar to other country contexts and local conditions. Or it may have addressed only specific questions (such as the effects of different policy options) rather than other, perhaps more urgent ones, such as how to implement preferred options.

The purpose of IDEAHealth is to improve the appropriate use of research evidence to inform policy-making. The Dialogue is co-hosted by WHO, the Thai Ministry of Public Health, the Alliance for Health Policy and Systems Research, and Khon Kaen University. Participants will explore the use of policy briefs and engage in frank, off-the-record, deliberations (these will be called ‘country dialogues’) as two innovative approaches to supporting evidence-informed action. As the name ‘Dialogue’ suggests, there are no pre-cooked answers, either to the primary question about how to support evidence-informed action (as a policy-maker, civil society group representative, researcher or global partner) or to the secondary questions concerning what constitutes evidence-informed action in the

three policy domains that country participants have selected as priorities for deliberation (financing, human resources for health, and maternal and child health).

RESEARCH EVIDENCE

Policy-making about actions that affect health, including health systems interventions, can be informed by a wide range of research evidence, including randomized controlled trials, observational studies, qualitative research, animal studies, and laboratory studies. Discussions of evidence-informed action can generate debates regarding what constitutes research evidence or what constitutes evidence more generally (Lomas et al. 2005). A common understanding of evidence is that it “concerns facts (actual or asserted) intended for use in support of a conclusion.” A fact, in turn, is understood to be something known by experience or observation. An important implication of this logic is that evidence is seen as being used to support a conclusion. But, significantly, it is not the same as a conclusion. Evidence alone does not make decisions.

This understanding of what evidence is has six implications.

- 1) **Expert opinion is more than just evidence.** It combines facts together with the interpretation of those facts, and with conclusions. Evidence informs expert opinions. Policy-makers and stakeholders (including civil society groups) therefore should use expert opinion appropriately by identifying the facts (experiences or observations) that underlie opinions and appraising carefully the extent to which facts support the conclusions (Schünemann et al. 2006).
- 2) **Global research evidence** (i.e., the best research evidence from around the world) **is the best starting point for judgements about effects and likely modifying factors.** This argument is based on the understanding that all research evidence is context-sensitive to some extent and, therefore, is at least partially indirect. Policies based on a subset of observations are more prone to random errors (Counsell et al. 1994), and judgements about whether to base a conclusion on a subset of observations, are better informed if the overall observations are known (Oxman and Guyatt 2002) (i.e., all of the relevant global research evidence). Systematic reviews provide a helpful source of global evidence about effects. They differ from regular literature reviews in that they involve systematic and transparent efforts to identify all relevant studies, select these studies for inclusion, assess the quality of the relevant studies, and synthesize the findings. This policy brief draws on systematic reviews of evidence of effects.

- 3) **Not all research evidence is equally convincing.** How persuasive research evidence is for effects should be judged according to criteria such as: What sort of observations were made? How well were they done? How consistent were they? How directly relevant were they? How many were there? And how strong was the association? Judgements about how much confidence to place in different types of evidence (i.e., the quality of the research evidence) are made both implicitly or explicitly. It is better to make these judgements systematically and explicitly in order to limit errors, resolve disagreements, and communicate information. This policy brief draws on quality-assessed systematic reviews of effects (and these reviews, in turn, draw on quality-assessed studies). This policy brief also provides checklists to assist policy-makers and their support staff, as well as civil society group representatives, in assessing the quality of overviews of systematic reviews (such as the overview presented in this policy brief); in evaluating the quality of systematic reviews (like the systematic review that will be discussed in some detail during the country dialogue in which you will be participating); in assessing the quality of research evidence and strength of recommendations; and in assessing equity and scaling up.
- 4) **All research evidence is context sensitive, given that observations are made in a specific context.** A judgement always needs to be made about their applicability beyond that context. It is best to make judgements about local applicability systematically and explicitly, for the same reasons that it is best to make systematic and explicit judgements about the quality of research evidence. This policy brief provides assessments of the local applicability of selected systematic reviews of effects and a checklist for assessing the local applicability of systematic reviews.
- 5) **Local evidence (from the specific setting in which policies will be set and actions taken) is needed for most other judgements related to the actions required,** including: the presence of modifying factors in specific settings, needs (prevalence, baseline risk or status), values, costs and the availability of resources. The ‘country dialogues’ will provide opportunities to discuss needs for country-specific evidence, how to acquire and assess this evidence, and how to integrate and utilize it with global research evidence about effects.
- 6) **Finally, because policy decisions depend on different types of evidence from different sources as well as different kinds of judgements, expertise and people, they are inevitably complex.** In addition to judgements about the quality and local applicability of the research evidence, judgements are needed concerning needs and priorities, about the balance between the desirable and

undesirable consequences of choosing one option over another, and about a range of other inputs to the policy-making process. While these issues will be touched on in the country dialogues, they are more appropriate as a focus for within-country dialogues.

POLICY BRIEF

This policy brief is an innovation-in-progress. It uses a graded-entry format (i.e. a list of key messages, an executive summary, and a full report) to present policy relevant research evidence about the *effects* of different policy options that could be used to address country-level health challenges. It was produced to illustrate and bring to life the challenges and opportunities in using research evidence to inform policy-making. The policy brief does not aim to provide a comprehensive overview of all of the research evidence relevant to policy-making in the area. In focusing on global research evidence about effects (both benefits and harms) and hence on studies that use research designs that are best suited to examining effects (i.e., randomized controlled trials, controlled before/after studies, and interrupted time series), it excludes other types of research evidence. This policy brief, for example, excludes global research evidence related to how and why interventions work, as well as local research evidence about the views and experiences of stakeholders, both of which can be addressed using qualitative studies. Moreover, the policy brief was produced under significant time constraints: limited input from policy-makers, civil society representatives and researchers was available when shaping its focus and format.

One outcome of the Dialogue will be ideas on how to improve this policy brief and the others that will follow. When reading the policy brief, you may want to consider the following questions: How useful is global research evidence for policy-making at the country level, and how could it be made more useful? What type of research evidence is typically used at the country level to inform policy-making, and how does it compare to the research evidence presented in this policy brief? What kinds of policy briefs should global institutions like WHO be developing and how can briefs such as this one be made more useful? Where are the key information gaps? What kinds of systematic reviews should be conducted, and what kinds of evaluations should policy-makers be considering when they implement new policies? How can policy briefs like this one be combined effectively with local evidence and input?

COUNTRY DIALOGUES

The country dialogues are also an innovation for such a large international meeting. While policy-makers are ultimately responsible for setting policies, actual policy development typically occurs through a complex set of interactions involving government officials, stakeholders (including civil society groups), and (sometimes) researchers. The country dialogues will reflect this complexity by bringing together small numbers of policy-makers, civil society group representatives and researchers for frank, off-the-record deliberations about the policy challenges they face in their respective countries; how research evidence about effects can inform the ways in which these policy challenges are addressed; and how other types of evidence can inform the way in which these policy challenges are addressed.

A second outcome of the Dialogue will be ideas about ways to improve deliberations about evidence-informed action, including how global institutions like the World Health Organization can support these deliberations through meetings like IDEAHealth and through other mechanisms. When participating in the country dialogues, you may want to consider the following additional questions: How useful are such dialogues for policy-making at the country level, and how could they be made more useful? What types of deliberations are used typically at the country level to inform policy-making? And how do these compare to the country dialogues taking place at IDEAHealth? What type or form of country dialogues should global institutions like WHO be supporting and how can dialogues such as those in which you participated be made more useful? Who is missing? What kinds of background materials should be prepared, and what kinds of facilitation should be provided?

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List of acronyms

CBA	Controlled Before and After
CBI or CBHI	Community-Based (Health) Insurance
CCT	Conditional Cash Transfer
EPOC	Effective Practice and Organisation of Care Group
FA	Familias en Acción
ITS	Interrupted Time-Series
LMIC	Low and Middle Income Countries
PHC	Primary Health Care
PNFP	Private not for Profit
PRAF	Programa de Asignación Familiar
PROGRESA	Programa de Educación, Salud y Alimentación
C-CRCT	Cluster Randomized Controlled Trial
RPS	Red de Protección Social
SHI	Social Health Insurance
STD	Sexually Transmitted Diseases

Key Messages

This brief considers the strength of evidence of the effects of five approaches designed to encourage the uptake of health care by poorer groups in low and middle income countries. These approaches are:

1. The introduction or removal of user fees
2. Community based insurance
3. Social health insurance
4. Contracting out service provision to non-state providers, and
5. Conditional cash transfers

WHAT IS THE NATURE OF THE AVAILABLE EVIDENCE?

We identified varied levels of evidence related to the five different mechanisms. The best quality of evidence was related to the use of conditional cash transfers to encourage the uptake of basic preventive health interventions. Few studies of user fees met the inclusion criteria set for this review and most failed to provide reliable evidence of the effects of user fee programmes. Similarly, we found remarkably little robust evidence related to the population-wide effects of both contracting out and community based insurance. None of the social health insurance studies identified met the inclusion criteria for this brief.

WHAT WORKS?

Best estimates of effects for this review were based on a consideration of the effects of these alternative mechanisms on access to health care by poorer groups. The effects identified are as follows:

User fees: the reduction or removal of fees at point of use appears to increase utilisation, while the level of evidence is weak for the effects on poorer groups. Some study findings suggested that if fees are introduced and quality of care improved simultaneously, this can improve access and utilisation for poorer groups. However, consistent evidence shows that introducing or increasing user fees has detrimental effects on levels of health service uptake. Exemption policies are seldom well managed enough to mitigate such negative impacts.

Contracting out services: there is evidence that contracting out services increases service delivery in previously underserved areas. A study in Cambodia showed that contracting out services increases access for poorer groups. Importantly, questions remain concerning issues of the capacity of non-state providers to deliver services on a large scale, particularly if contracting out were to be scaled up. The implications of this for the integrity of health systems also needs to be addressed.

Conditional Cash Transfers: the introduction of conditional cash transfers for poorer groups has been shown to increase the uptake of preventive health services in several settings. However the use of conditional cash transfers is only relevant in settings in which functional primary health care systems already exist. The management capacity required to run these schemes is also cause for concern.

WHAT LOOKS PROMISING?

Risk Protection – it is unclear whether either Social Health Insurance or Community Based Insurance has a positive effect on access to care for poorer groups. Few examples exist of either mechanism being delivered on a large scale in low and middle income countries. There are attendant issues related to both the complexity of managing such schemes on a large scale, and whether adequate capacity is available to sustain this kind of approach.

WHAT OTHER ISSUES NEEDS TO BE CONSIDERED?

The following overarching issues should be considered when deciding whether to adopt these types of financing mechanisms:

- Government capacity – especially management capacity – is important to all five mechanisms
- The overall level of economic development is particularly crucial to social health insurance approaches
- The development of the health system is important for most mechanisms, with the exception of contracting out where the pool of potential health providers is a more central consideration
- Local values and attitudes which are most important for user fees and insurance mechanisms.

Policy makers should also consider alternative financing mechanisms, for example, possible tax financing of basic services packages. Potential combinations of the different mechanisms should also be assessed.

Given the considerable uncertainty regarding many of the mechanisms reviewed, a thorough evaluation of their effects is critical.

Executive Summary

BACKGROUND

Increasing evidence indicates that many vulnerable groups are effectively excluded from accessing reasonable quality health care in low and middle income countries. Even services established as highly cost-effective have been seen as failing to reach those in need.

Financial barriers have been recognized as primary obstacles for those trying to access health services. In low and middle income countries (LMICs) chronic under-funding of health systems has sometimes led to the adoption of health financing mechanisms whose beneficial effects are disputed. Given this growing concern several innovative financing mechanisms have been developed that aim to encourage greater service provision efficiency and a greater uptake of existing services.

This policy brief reports the findings of a series of systematic reviews that assessed the impact of five health financing policy options on access to health services, particular for poor populations.

POLICY DECISIONS AND OPTIONS

This policy brief focuses on five health financing options that have been proposed as mechanisms to improve access to health services for poor people and to reduce the financial burden represented by health care, namely:

- **User fees:** charges levied on any aspect of health services at the point of delivery. It has been argued that the additional revenue they generate, directly, or indirectly through better allocation of resources, can be used to improve the quality and availability of government health services, thereby benefiting the poor. Counter arguments advocating the removal of user fees as a mechanism to improve financial accessibility for the poor, have gained increasing currency during the last decade
- **Community Based Health Insurance (CBI):** a form of voluntary, not-for-profit insurance mechanism that often involves some form of community management. CBI schemes are typically based on a collective entity defined by, for example, geographi-

cal, professional, or religious affiliations. CBI has been introduced as a method of increasing revenue for health care, while reducing payments at the point of use. CBI also allows for the redistribution of resources from the healthy to the sick

- **Social Health Insurance (SHI):** a form of compulsory insurance, that aims to provide universal coverage. The compulsory nature of such schemes should reduce adverse selection and enable extensive redistributive mechanisms between healthy and sick people, as well as between poor and better off groups
- **Contracting out:** the hiring of a non-state provider (often an NGO) to provide health services for a specific geographic area and period of time, on behalf of the government. This has been advocated as a more efficient way to provide health services, and as an effective solution when available services in underserved areas need to be increased
- **Conditional Cash Transfers (CCT):** provide monetary transfers to households on condition that they comply with pre-defined requirements. CCT programmes have been justified on the grounds that demand-side subsidies are necessary to address barriers constraining poor people's use of health and other social services.

METHODS

Both published and grey literature was searched using search strategies developed in conjunction with PubMed. To be included, a study needed to have been implemented according to one of the following three study designs: randomized controlled trials, interrupted time series analyses, or controlled before-after studies. In addition, the studies had to provide an objective measure of at least one of the following outcomes: health care utilization, health expenditure, health outcomes or equity outcomes.

A quantitative re-analysis of time series data was undertaken for studies with sufficient data where an appropriate method had not originally been used.

Each study was independently assessed by two reviewers, according to a set of quality criteria designed to identify major bias in the study design or analysis.

Other relevant studies are used in this brief to answer specific implementation issues and provide additional relevant information.

RESULTS

User fees: 17 studies were included in the systematic review but many were significantly flawed. The reduction or removal of fees appears to increase utilisation for poorer groups, although the level of evidence is weak. Experiences to date in removing user fees suggest that the planning of such policy changes should be done with caution in order to avoid adverse effects. Evidence from a number of studies suggests that introducing or increasing user fees has a detrimental effect; others contradict this claim and argue that if the quality of care is improved simultaneously, this can improve access and utilisation for poorer groups. The studies which have demonstrated positive effects on utilization (through combining user fees and quality improvements) have been small-scale studies whose replicability at the national level has proven difficult. This is due particularly to

the limited revenues typically raised through user fees. There is also strong evidence that poorer groups are more sensitive to price variations and that exemption policies are seldom well managed or effective enough to protect the poor from the detrimental effects of user fees.

Community-based insurance: only one study met the inclusion criteria for this systematic review. It is therefore unclear to what degree such limited evidence should be used to generalise whether CBI has a positive effect on access to care for poorer groups. Descriptive case-studies have shown that disadvantaged populations are less able to enrol in such schemes. Further, these studies have also suggested that the technical skills required to design, implement and sustain CBI schemes may limit their replicability. Finally, reviews of existing CBIs in low and middle income countries have emphasized their limited scale and a rather disappointing capacity to mobilize revenue.

Social health insurance: we were unable to identify any studies meeting our inclusion criteria for this type of financing mechanism. Few examples exist of social health insurance schemes operating at a large scale in developing countries and even fewer have evidence related to their impact. Without careful design and implementation it is possible that developing social insurance may have unforeseen negative impacts on equity. There are also attendant issues regarding the complexity of extending such SHI schemes to a national level and the feasibility of developing adequate technical capacity in developing country contexts.

Contracting out services: three studies were included in this systematic review. All provided rather weak evidence for the claim that contracting out increases service delivery in previously under-served areas. A study based in Cambodia showed that contracting out services increased access for poorer groups, though these findings were undermined by methodological weaknesses. Other descriptive literature on contracting out highlighted issues regarding the capacity of non-state providers to deliver services on a large scale if contracting out were to be scaled up. Widespread contracting of health services, particularly if donor driven, may also undermine government's stewardship role within the health sector.

Conditional Cash Transfers (CCT): good evidence from six different experiments of conditional cash transfers was synthesized in this review. Offering conditional cash transfers to targeted poor populations is an effective mechanism to increase the uptake of preventive health services, and sometimes improving health status. However the use of conditional cash transfers seems relevant only in settings where functional primary health care systems exist already. Substantial management capacity is needed to run CCT schemes.

DISCUSSION

This policy brief is constrained by its focus on a limited number of financing mechanisms. It also reviews studies that employ specific study designs, and focuses only on evidence from low and middle income countries. Although the brief is transparent in its approach and methodology, it could be strengthened by focusing more on how contexts

influence the effects of the mechanisms themselves. In addition a broader range of financing mechanisms could be included and consideration given to the effects of different combinations of financing mechanisms.

There remain substantial evidence gaps in the field of health financing. More high quality impact evaluations are needed, particularly related to insurance mechanisms and contracting out. Given the uncertainty concerning the effects of such schemes and the serious risk of adverse effects, policy makers are advised to include impact evaluations alongside health financing reforms. In addition, other study designs that provide complementary evidence associated with implementation issues, and people's attitudes are needed.

The capacity of government to manage and administer alternative health financing schemes is critical to all of the mechanisms considered. For social health insurance both the rate of participation in the formal labour market, and the income per capita will influence the likely success of any scheme. The state of existing health systems is also a crucial consideration. Contracting out may work well in contexts where public health systems have deteriorated, provided there is a pool of health care providers who can bid on contracts. Societal attitudes and values are particularly important when considering user fee policies, and health insurance mechanisms.

Introduction

BACKGROUND

National patterns of health financing are strongly influenced by the level of resources available from governments, social and private insurance schemes, foreign donors, employers, non-governmental organizations, communities and households. In low and middle income countries the principal features of financing mechanisms are:

- A low tax base resulting in lower level of government financing relative to wealthier countries⁴
- High out-of-pocket spending by households
- Relatively high levels of donor financing (particularly in low income countries), and
- The fragmented provision of health services and complex patterns of health seeking behaviour and payments (this may involve care from drug sellers, private practitioners, NGOs and government clinics and hospitals)

The Commission for Macroeconomics and Health estimated that a minimum of \$34 per head is needed to make basic health care available in all countries⁵. Despite the signing of the Abuja Declaration of 2001 – in which African governments pledged to spend 15% of their national budgets on health programmes – most African countries have failed to raise public spending to this promised level⁶. This public under-funding of health systems contributes to higher levels of private funding, the majority of which is out-of-pocket. Consequently, many of those most in need of care do not and cannot access health services⁷. Even services established as highly cost-effective are failing to reach those in need⁷, and there is increasing evidence that the poorest and most vulnerable groups are those with least access⁸. Limited access and low utilization of basic health services are, in turn, factors contributing to the persistence of disease and low life expectancy.

The introduction or increase of user fees emerged on the policy agenda during the late 1980s as a possible solution to countries' health financing problems. Increasing budget deficits throughout the developing world at this time and a decline in quantity and quality of publicly subsidized health services led to a higher dependence on patient payments through the introduction of user fees. This change was initially supported both by UNICEF (through the Bamako Initiative which promoted 'community financing' of

primary health care) and the World Bank⁹⁻¹¹. However, in the 1990s questions were raised related to the negative impacts that user fees could have on equity and access¹²⁻¹⁴. Since 1994 South Africa, Uganda, Burundi and Zambia have removed user fees at the primary care level, but there is still a vigorous debate over both the consequences of these withdrawals and their effects on effective service delivery. More recently, risk protection mechanisms such as community-based insurance and social health insurance have been touted as ideal solutions to alleviate some of the undesirable effects of user fees. These mechanisms for risk protection are seen to combine the desirable elements of raising funds from members of the insurance scheme at a rate set according to their ability to pay, together with that of protecting households from payments at their most vulnerable time when a family member is ill¹⁵.

Contracting out for services became a popular policy option during the 1990s, a decade which saw extensive public management reforms introduced in industrialized countries. The application of contracting out, it was argued, allowed a greater focus on measurable results; increased managerial autonomy; drew on private sector expertise; and increased the effectiveness and efficiency of services through competition. Opponents of these reforms questioned the extent to which the advantages of competition could, in fact, occur in low income contexts given the relative lack of providers. Similarly, they highlighted the difficulty and costs in specifying and monitoring contracts. Contracting out services to non-state providers such as NGOs has been proposed as an efficient way of promoting access to good quality services for poorer groups, in comparison with the difficulties experienced by governments in providing similar services¹⁶. This is particularly pertinent to post-conflict countries where existing health systems and health financing structures may have collapsed. The use of contracting continues to rise, with relatively large scale contracting now occurring in Afghanistan, Pakistan, Bangladesh, India, Rwanda, Southern Sudan and the DRC^{17,18}. It has also been argued that NGOs can be more efficient than the public sector and that their role in improving service delivery rapidly increases access.

Finally, a more recently proposed policy option to improve service coverage among poor groups, is that of conditional cash transfers (CCTs), which have proved extremely popular in Latin American countries. In CCT schemes, families are given grants conditional to certain behaviours. There is considerable interest in whether such mechanisms can prove effective in improving access to social sector services in other settings¹⁹. Conditional cash transfer (CCT) programmes usually aim to increase demand for preventive health services and education. CCTs are also intended to help with overcoming barriers to access to social services: monetary transfers can compensate for indirect or opportunity costs related to those seeking health care or sending their children to school. Finally, these programmes are often justified by social equity concerns. As poor people usually accumulate the detrimental effects of different barriers to access, CCT mechanisms are seen as a single transfer mechanism that can 'level the playing field' and redistribute endowments that equalize opportunities in a society. The aims of CCT programmes are broader than those of improving the uptake of preventive health interventions, and include the larger and critical issue of building human capital. As such, they provide a financial incentive for households to comply with beneficial behaviours, including access to health services.

FOCUS OF POLICY BRIEF

This policy brief presents findings from a series of systematic reviews conducted by the authors and funded by the Bill and Melinda Gates Foundation. The review offers an assessment of the different methods for increasing the uptake of health services by poorer groups in low and middle income countries. The brief covers four mechanisms which are of topical interest in the debate on extending access to health services to poor people, namely, user fees, community based insurance, social health insurance, and contracting out to non-state providers. It further evaluates an innovative demand-side financing strategy which has received a great deal of attention: conditional cash transfers. Conditional cash transfers are not a financing mechanism per se, but they are a way of using financial incentives to increase the uptake of services by poor people and hence increase access. Each of these mechanisms is highly topical within current debates about how best to increase access to health services for poorer groups, or reduce the potentially devastating consequences of out-of-pocket payments required when people fall ill. The brief focuses on the demand-side perspective only and does not address provider perspectives in any detail.

There are a number of documents that consider how best to pay for health services^{15,20}. There are also a multitude of published studies evaluating the performance of different aspects of a health financing system. However, few reviews have adopted a systematic approach (with one notable exception on the subject of community based insurance²¹).

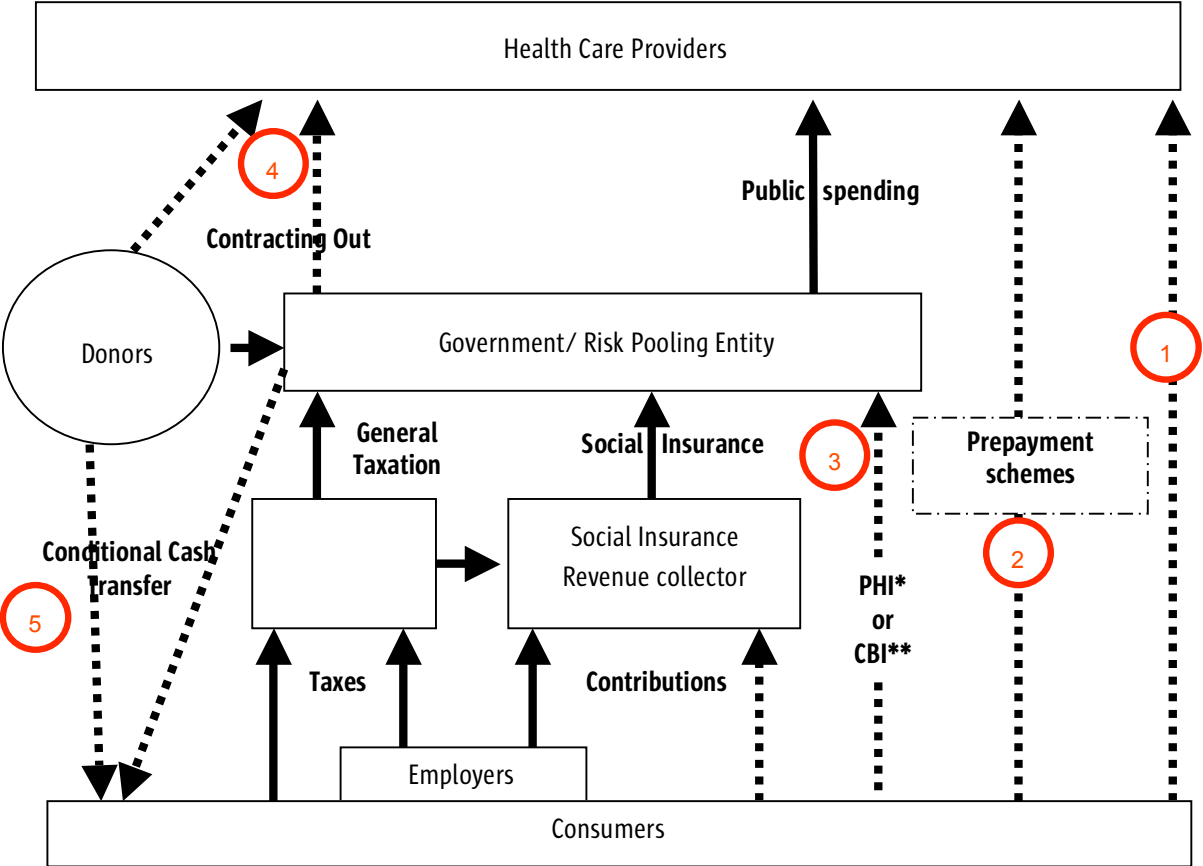
CONCEPTUAL FRAMEWORK

Health financing mechanisms typically comprise: i) the collection of funds ii) the pooling of funds, and iii) the purchasing of services. Figure 1 illustrates the financial flows that occur in low and middle income countries between donors, governments, health care providers and health care consumers. Sources of finance for health care include direct payments by health care consumers (Mechanism 1: user fees), general tax revenues collected by government, or payments by consumers (and sometimes employers) into a risk pooling or insurance scheme, or external funding by donors or charitable contributions. As the diagram illustrates, the pooling of funds may occur through government tax financing or health insurance schemes (including community based health insurance – Mechanism 2; or social health insurance – Mechanism 3), as well as by private health insurance.

The final step in a health financing system, the purchasing of services, can occur through a variety of mechanisms, ranging from a government's use of tax revenue to provide subsidies to government health care providers, through to sophisticated purchasing mechanisms. Contracting out of services (Mechanism 4), represents one particular mechanism whereby funds, originating either from government or directly from donors, are used to purchase services from private health care providers.

Conditional cash transfers are innovative mechanisms where government or donor funds are used to make payments to households, conditional upon their compliance with certain conditions (Mechanism 5).

Figure 1 - Financial flows in a health system



Source: adapted from Dreschler and Jutting²² ;

* PHI: Private Health Insurance

** CBI: Community-Based Insurance

Box 1 below defines the five different mechanisms covered in this review. In all countries health financing systems rely upon a mix of different financing mechanisms. Governments face policy choices in terms of which particular mix of mechanisms they choose to employ.

Box 1 - Definition of Mechanisms considered in Brief

User fees are charges levied for any aspect of health services. The scope of user fees is quite variable, and can entail any combination of drug costs, supply and medical material costs, entrance fees, and consultation fees. Fees can be paid for each visit or can encompass a whole episode of illness.

Community Based Health Insurance (CBHI or CBI) is the generic term for voluntary, not-for-profit insurance mechanisms, frequently involving some form of community involvement in their management¹⁵. Such schemes are designated by many other terms including micro-health insurance, mutual insurance scheme, microinsurance²⁵ or, more rarely, mutual health organization²⁶. These mechanisms usually share three characteristics¹⁵:

- They are based on a collective entity that may be defined on a geographical, professional or religious basis
- The beneficiaries of the scheme usually belong to populations with no other access to health financing risk protection e.g. social health insurance or a tax based health system
- Enrolment is voluntary.

Unlike CBIs, Social Health Insurance (SHI) is a form of compulsory scheme, normally on a national scale. The ambition of SHI is to be universal: every household should be covered, and every citizen is required to make contributions. Governments may contribute on behalf of the poorest and the unemployed; employers also usually contribute on behalf of their employees.

Contracting out usually takes the form of a non-government sector provider contracted to provide a range of clinical or non clinical services to a specified population. A contract document usually specifies the type, quantity and period of time during which the services will be provided on behalf of the government²⁷. In developing countries this commonly takes the form of NGOs being hired to provide primary health care in a specific geographic area. Sometimes donors rather than governments may contract directly with private providers.

Conditional Cash transfers (CCT) provide monetary transfers to households on condition that they comply with specified requirements. Therefore CCTs have broader objectives and ambitions compared to traditional cash transfers: they are an incentive for households to adopt behaviours that will positively impact their well-being. CCT programmes are often justified on the grounds that demand side subsidies are necessary to address particular constraints and bottlenecks in the provision of social services.

Table 1 below summarizes the five main policy decisions or options explored in this brief, the nature of the evidence used and the corresponding pages in the brief.

Table 1 - Five Main Financing Mechanisms and Evidence presented in this Brief

Policy decisions/options	Evidence	Comments
User fees	Systematic review	See pages 25 to 30
Introduce community-Based insurance or pre-payment schemes	Systematic review	See pages 31 to 34
Introduce social insurance	Systematic review	See pages 34 to 35
Introduce contracting out	Systematic review	See pages 36 to 38
Introduce conditional cash transfers	Systematic review	See pages 39 to 42

Methods

SEARCH STRATEGY

A comprehensive search was performed to avoid both bias in the selection of published articles and bias in the language of publications. A variety of databases were used: general, bibliographic, specialised, geographic and economic, as well as databases related to development studies. Peer-reviewed academic journals and grey literature (unpublished/internal or non-reviewed papers and reports) were searched. The complete PubMed search strategy used is provided in Appendix 1. This strategy was adapted to all databases.

Relevant websites and the online resources of relevant international organisations, consultancy firms and academic and research centres were also searched.

A comprehensive screening of the reference list of most relevant papers and reviews was undertaken. Contact with academic experts in the field completed the search.

SELECTION OF STUDIES

The criteria for considering studies in the reviews were applied in two stages.

At the primary stage, titles and abstracts of studies were included on the basis of the type of intervention investigated: introduction or increase of user fees, removal or decrease of user fees, risk protection mechanism – CBI and SHI, contracting out, and Conditional Cash Transfer. The second stage inclusion criterion was based on geography: this review included only those studies undertaken in low and middle-income countries as defined by the World Bank.

Studies selected after the first stage were retrieved and screened again in greater detail. We verified their adequacy with respect to the first inclusion criteria, and excluded studies that:

- a) Did not have study designs meeting the criteria set for the review. The study designs included in the review were specific: randomized controlled trials (RCT), controlled Before and After studies (CBA) or Interrupted Time-Series (ITS). (See Appendix 2 for further detail); or
- b) Did not have any outcome of interest. For the purposes of the reviews, outcomes of interest were defined as:
 - Access to care measured by changes in utilization patterns of health facilities or services (immunization coverage, number of visits, rates of hospitalisation, numbers of people having bought an insecticide-treated net etc.) and/or equivalent information collected directly from the population through rigorous survey techniques. Information related to distance travelled or travel times were beyond the scope of our study
 - Impact on poorest populations: this required a preliminary analysis and categorisation of the population of interest along a socio-economic scale. All methodologies (such as a wealth/asset index) were accepted provided they were rigorous and detailed. Attention was also given to any other outcomes that were disaggregated by, for instance, age, gender or geographical area
 - Health care expenditure: when it directly reflected direct (and indirect) costs borne by the patients or their families
 - Finally, changes in health outcomes, measured by morbidity and mortality rates (disaggregated by age group, sex, etc.) were also considered

Importantly, only outcomes resulting from objective measures of utilization, performance or patient outcomes were accepted. Studies based solely on the measurements of attitudes, beliefs or perceptions were not included.

QUALITY ASSESSMENT

The conclusions of a systematic review depend primarily on the quality of the studies included. Therefore, an assessment of such quality is an integral part of the analytical process. The list below provides a summary of the main points that were checked, in relation to each particular study design (See Appendix 3 for the complete list) :

Randomized Controlled Trial (RCT): concealment of allocation, protection against exclusion bias, sampling (for C-RCT), quality of statistical analysis, quality/reliability of the data, protection against detection bias, baseline measurement, protection against contamination.

Controlled Before and after studies (CBA): baseline characteristics, equivalence of control site, protection against exclusion or selection bias, protection against contamination, quality/reliability of the data, and quality of statistical analysis.

Interrupted Times-Series studies (ITS): protection against secular changes, appropriate analysis, selection bias in the sample framing, quality/reliability of the data, specification of intervention, detection bias.

Each study was independently assessed by two reviewers. Any discrepancies were resolved by discussion.

SYNTHESIS

When necessary and where possible, data re-analysis was performed to obtain statistically robust results. In particular, studies using longitudinal data over a period of time spanning the periods before and after policy changes were frequently found and re-analysed using the proper ITS methodology²⁸.

All studies included in this report were categorized into three groups according to their risk of bias:

- High quality: potential bias unlikely to seriously alter the results
- Moderate quality: biases are present and raise some doubts about the results
- Low quality: those studies in which important biases seriously weakened confidence in the results

A structured, narrative approach was used to summarize and analyse the results. Summary tables detailing the main characteristics of each study were computed. Key contextual factors were also considered, especially those within and between countries; implementation processes likely to have modifying effects on the outcomes were recorded.

Any attempt to compare quantitative results was weighed against the risk of synthesizing different outcomes.

In addition to the studies that met the inclusion criteria described above (these studies are listed in a table format in the 'Key findings' section of each policy option), this brief refers to a number of other studies that responded to specific questions, particularly concerning the equity effects, questions of local applicability, as well as challenges to scaling up. Other non-systematic reviews which synthesised other types of evidence (i.e. that did not focus on the effectiveness of the financing mechanism, but examined other issues instead) are also included.

Results

Policy option 1: User Fees

A) RESULTS FROM THE SYSTEMATIC REVIEW

Despite the large existing literature on the subject, the literature search identified a scarcity of reliable evidence related to the impact of the increase, decrease, introduction or removal of user fees. A detailed diagram presenting the number of references identified, selected, appraised and synthesised can be found in Appendix 4.

1. Increasing or introducing user fees – key findings

We found 12 studies from eight countries that met the review's inclusion criteria, and that presented evidence on the impact of introducing or increasing user fees. These are listed in 2 below.

Table 2: Studies of the introduction or increase of user fees

Country	Study design	Intervention	Impact on utilisation	Impact on health expenditures	Impact on the poorest	Quality of evidence
Burkina Faso ²⁹	ITS‡	Introduction of user fees in PHC facilities	0	N/A	N/A	⊕○○
Kenya ³⁰	ITS‡	Introduction of user fees in hospitals and health centres	–	N/A	N/A	⊕○○
Kenya ³¹	ITS‡	Introduction of user fees in hospitals and health centres	–	N/A	N/A	⊕○○
Kenya ³²	ITS‡	Introduction of user fees in the national referral structure for STDs	–	N/A	N/A	⊕○○
Papua New Guinea ³³	ITS‡	Introduction of user fees for antenatal care in a hospital	–	N/A	N/A	⊕○○
Kenya ³⁴	C-RCT	Introduction of user fees for preventive deworming drugs	–	N/A	N/A	⊕⊕○

Niger ³⁵	CBA	Introduction of user fees + quality in PHC facilities	+	N/A	+	⊕○○
Cameroon ³⁶	CBA	Introduction of user fees + quality in PHC facilities	+	N/A	+	⊕○○
Lesotho ³⁷	ITS‡	Increase of user fees in PHC facilities	-	N/A	N/A	⊕○○
Ecuador ³⁸	CBA	Increase of user fees for IUDs in PNFP facilities	-	N/A	N/A	⊕○○
Gabon ³⁹	CBA	Increase of user fees in a private hospital	-	N/A	N/A	⊕○○
Ecuador ⁴⁰	C-RCT	Increase of user fees for reproductive health services (ob-gyn, ante-natal care) in PNFP clinics	+	N/A	0	⊕○○

[‡]Longitudinal data were reanalysed by the authors of the review. Therefore results do not necessarily reflect the conclusions obtained by the authors of the original paper, who may have used other methodologies and analysis. In the case of the Burkina Faso study, we found different results and drew different conclusions to those presented in the original article.

+ Indicates a positive impact on the outcome variable, - a negative impact, and 0 no changes. N/A indicates that data were not available.

Most studies showed a reduction in utilisation following the introduction of fees. However, two studies that recorded the impact of increased fees when these were linked to increased quality, found an increase in utilisation^{35,36}.

Several of the studies were based in Kenya, where user fees for hospitalization and outpatient care were introduced in 1989 (dispensary care still remained free). Data from three studies relating this experience³⁰⁻³² all show a negative impact on utilization following the introduction of fees. One focused on the impact of the reform on attendance at Nairobi's clinic for sexually transmitted diseases³², where monthly data revealed a sharp drop in utilization after fees were introduced both for men and women. Another study shows that outpatient visits dropped in regional and district hospitals in six districts.

Similarly, longitudinal data from Lesotho³⁷ indicated a significant negative impact on utilisation in public facilities when fees were increased; no changes in utilisation were detected in private not-for-profit facilities at the same time where fees remained unchanged). Lastly, a study from Gabon based in a private hospital³⁹ reported negative impacts following two consecutive price increases for outpatient visits.

Only three studies reported positive effects when increasing or introducing user fees. An experimental study from Ecuador⁴⁰ showed that prenatal care and OB-GYN visits were relatively unaffected by large increases in user fees. However, the presence of high rates of inflation was an important confounding factor in this setting, and seriously limits the validity of this study. Two quasi-experimental controlled before-and-after studies in Cameroon³⁶ and Niger³⁵ explored the interplay between quality of care and demand for services, and the introduction of fees. The study in Cameroon argued that introducing consultation and drug fees alongside quality improvements (drugs and management committee) in primary care facilities led to an increase in utilisation compared with the

previous situation of free but poor quality care. A household survey in the catchment areas of the facilities showed a decrease in the proportion of sick people and greater utilisation of intervention health centres, suggesting that the intervention had improved access. This was particularly true for the poorest quintile.

An experiment in Niger tested the effects of introducing user fees versus a mixed system of local taxation and lower user fees. These interventions were accompanied by quality improvements oriented towards better technical quality of care (health worker training on diagnostic and treatment protocols, provision of drugs and financial system). Findings indicated better results for the mixed system, which yielded 73% more outpatient visits and an increase in both of the newly introduced systems over previous utilisation levels. Again, positive effects for equity were also noted – the proportion of people in the poorest quartile who had visited a health facility doubled. These studies have often been cited as strong evidence that user fees may facilitate quality improvement in facilities and actually increase utilisation.

With the exception of the Niger and Cameroon research, none of the studies assessed the impact of the introduction of user fees on the quality of care. Equally these studies did not record the potentially impoverishing effect of increased payments for households that continued to seek services.

2. Decreasing or removing user fees – key findings

We located five studies that described the impact of removing user charges on health utilization in three countries, and two studies that assessed the effects of reducing fees.

Table 3: Studies of the removal or reduction of user fees

Country	Intervention	Study design	Impact on utilisation	Impact on health expenditures	Impact on the poorest	Quality of evidence
Uganda ⁴¹	Abolition of user fees in PHC facilities	ITS [†]	+ / 0	N/A	N/A	⊕○○
Uganda ⁴²	Abolition of user fees in PHC facilities	ITS [†]	+ / 0	N/A	N/A	⊕○○
Kenya ³²	Abolition of user fees in the national referral structure for STDs	ITS [†]	+ / 0	N/A	N/A	⊕○○
Kenya ³¹	Abolition of user fees in PHC facilities	ITS [†]	+	N/A	N/A	⊕○○
South Africa ⁴³	Abolition of user fees in PHC facilities	ITS [†]	+ / 0	N/A	N/A	⊕○○
Colombia ⁴⁴	Decrease of user fees for one contraceptive product (an implant)	CBA	+	N/A	N/A	⊕○○
Sudan ⁴⁵	Decrease of user fees in PHC facilities	CBA	+	N/A	N/A	⊕○○

[†]Longitudinal data were reanalysed by the authors of this review. The results, therefore, do not necessarily reflect the conclusions and views of the authors of the original paper

+ Indicates a positive impact on the outcome variable, – a negative impact, and 0 no changes. N/A indicates that data were not available.

Within this set of studies some of the previous Kenyan user-fee studies were re-used. This was because the use of fees in hospitals and health centres introduced in the late 1980s, was subsequently dropped. Data from two studies^{31,32} showed that abolishing the recently introduced fees had a positive effect on utilisation.

A small study using data from a mobile clinic in South Africa⁴³ documented the impact on attendance due to the removal of fees at the primary level. The results of this study were mixed: positive impacts on antenatal attendances, registrations and primary health care consultations of adults were noted, but no change was observed on the levels of child registrations and consultations.

Evidence from two studies examining fee removal in Uganda^{41,42} also suggested that the abolition of user fees in 2001 had a positive impact on curative care consultations in public health facilities. These results are particularly significant given that both studies used data from large national samples of facilities.

Finally, an experimental study from Sudan has showed that the number of consultations for malaria for children and pregnant women started to rise when there was a major decrease in prices.

3. Impact on poorest populations

Most of the studies included in this systematic review failed to provide insight concerning the issue of equity which underpins many debates pertaining to user fees, given that most relied on aggregated routine data. Two studies reporting the effects of improvements in quality when associated with the introduction of user fees^{35,36} were notable exceptions. Both concluded that poor people can benefit from such interventions. However, the results for the Niger study were unreliable due to the confounding presence of informal fees at the control sites; it is possible that similar problems occurred in the Cameroon study.

4. Limitations of the evidence

Most studies included in this review suffered from serious methodological biases. Many used data from routine registers, whose quality and reliability is often questioned. Most of them failed to provide satisfactory statistical analysis; re-analysis of existing data was carried out in many cases. Most were conducted over a period of many years and therefore a number of confounding factors – including, for example, other health system reforms or external economic shock – may have played an important role in influencing aspects of the health system and household demand..

In addition, most of the studies reviewed provided only utilization data for the facilities where policy change occurred. Therefore, these studies may have failed to identify: a) differential impacts across population groups, and b) differential impacts across facility groups and potential substitution or crowding out effects (with for example, shifts away from government facilities that had increased charges to private non-profit facilities).

As user fees are often justified as a way to improve quality, both dimensions of outcomes (access and quality) should be ideally assessed at the same time, in order to capture the full effects of various policy options.

Two studies assessing the impact of the simultaneous introduction of quality improvements and fees^{35,36} were among the most ambitious and extensive of those investigating user fee introduction. However, in addition to poor statistical analysis, both contained strong confounding factors. In the case of the Niger study informal user fees were in place prior to the study interventions⁴⁶. This is suspected, too, of the research in Cameroon. Finally, neither study addressed the issue of the sustainability of the quality improvements they introduced, and in particular whether revenue raised through the introduction of the user fees would cover the innovations.

B) DISCUSSION

1. Insights from non-included literature

Studies have shown the poorest populations to be characteristically more sensitive to price^{47,48} than others. They are thus often delayed or deterred from seeking health-care by even minimal user fees⁴⁹.

Recent literature has emphasized the long-term consequences that user charges can have not only on health but also on poverty; catastrophic health expenditures can lead to lasting negative consequences and possibly to impoverishment⁵⁰⁻⁵².

2. Local Applicability

Countries have varied histories related to user fees and their application to health services. The question of the acceptability of user fees is therefore likely to vary between national and cultural contexts.

Policy makers should also consider the likely effectiveness of exemption mechanisms. The lack, or ineffectiveness of, exemption schemes to protect the poorest has been documented in many settings^{12,53-55}. Efficient targeting, i.e. the identification of the poorest or the most in need of exemption has proven problematic in practice within low income settings where it is likely to require means testing⁵⁶. In addition, several practical issues limit the enforcement of exemption policies: lack of direction on how to implement national exemption policies, limited managerial capacity and/or willingness of health workers to enforce the rules, or inconsistencies in the granting of exemptions, – all constitute recurring obstacles to effective exemption schemes⁵⁷.

Policy makers need to consider the presence and level of existing informal charges and how the introduction of user fees may impact as yet another additional user charge. If informal charges are widespread, then it is possible that formal user fees may, in fact, be lower than these other informal charges; as such they may present less of a barrier to access for the poor⁵⁸. However the impact of the introduction (or removal) of user charges on informal payments has not been documented.

The following issues emerged as key factors in the successful removal of user fees, based on reports from South Africa⁵⁹ and Uganda⁶⁰:

- Planning for the additional resources required, for example, increased drug supply⁴²
- Managing the workload and motivation of health workers if utilisation is expected to increase dramatically. In South Africa, shortages of drugs and manpower in the face of massive increases in utilisation were very demotivating for health workers
- Monitoring and regulation of informal charging by health workers to compensate for the additional workload and the loss of revenue⁴¹.

If these concerns are not addressed, they may well counteract or limit the benefits of abolishing user fees.

3. Scaling up

User fees are typically decided at a national policy level and therefore the issue of how to scale up is less relevant than with other mechanisms that have been implemented mostly as pilot projects. Two studies from Niger and Cameroon were conducted as small scale pilots and benefited from intensive external support, not only to set the financing mechanisms in place, but also to promote quality improvements. Questions remain concerning the sustainability of the quality improvements they introduced, and in particular whether the revenues raised via the user fees covered the cost of the innovations introduced.

Many studies indicate that revenue generated by the introduction of user fees is limited: estimates are below 10-20% of recurrent costs^{14,61-63}, even though they can contribute critically to non-salary recurrent costs. A number of descriptive studies have also highlighted issues related to management difficulties and capacity constraints in the retention of fees at a facility level^{48,56,64,65}.

Policy option 2: Community-Based Insurance

A) RESULTS FROM THE SYSTEMATIC REVIEW

This extensive literature search was unable to identify any studies examining the effectiveness of CBIs in promoting access to care for the poor. We identified only one controlled before-and-after study on the impact of prepayment schemes in Rwanda⁶⁶, and this is described below.

1. Key findings

Table 4: CBI studies included in this report

Country	Intervention	Study design	Impact on utilisation	Impact on health expenditures	Impact on the poorest	Quality of evidence
Rwanda ⁶⁶	Pilot programme of 'mutual health associations'	CBA	+ / -	N/A	N/A	⊕○○

+ indicates a positive impact on the outcome variable, - a negative impact, and 0 no changes. N/A indicates that data were not available.

This programme assessed the impact of 52 CBI mechanisms created in three districts, with a pooling of funds occurring in each district. Health utilization was compared with two other control districts where payment was still made at the point of delivery. Results from health centres showed that in experimental districts prenatal consultations and deliveries increased significantly compared to control districts, while curative consultations decreased across all districts. Enrolment rates were very low (8%) and varied considerably between schemes (from 55% to below 1% of the population).

2. Impact on poorest populations

This review did not locate any results related to the equity effects of the scheme.

3. Limitations of the evidence

Evidence from this Rwanda-based study had considerable limitations in terms of the criteria and questions developed for this review:

- There were notable differences between control and treatment sites from the outset (size, number of health centre/capita)
- Heavy external support from donors and government (50% of total resources) necessarily leads one to question the sustainability of the scheme
- The study showed that access and utilisation for preventive services may have improved for those participants enrolled in the schemes. However, it does not provide data on the impact of the scheme at a population level. Indeed, with enrolment of only 8% of the population across the three districts it would be hard to contend that an impact at the population level would be possible.

B) DISCUSSION

1. Insights from non-included literature

Other studies, mostly descriptive case studies that do not meet the criteria set for study inclusion, suggest that CBI schemes have limited potential to strengthen resource mobilization²¹; little evidence is available on CBI effects related either to health service efficiency or quality. Another systematic review which was identified, indicated that the low quality of current studies prevents useful conclusions being drawn regarding the potential moral hazard²¹ (i.e. the extent to which insurance may lead to unnecessarily high utilization).

There are also mixed indications for the ability of CBIs to offer financial protection for their members²¹. Some studies and reviews have reported optimistic conclusions on the capacity of such schemes to provide financial protection⁶⁷⁻⁷⁰, even against catastrophic expenditures⁷¹; others find this capacity more limited⁷²⁻⁷⁵.

There is also evidence from cross-sectional studies that the poorest parts of the population in low-income settings are unable to afford the premiums of CBI, even when such charges are small⁷⁶. This 'exclusion bias' of CBIs constitutes a major limitation on their ability to reduce inequalities or be an equitable financing mechanism. CBIs may actually increase the existing inequalities in the target population if better-off people are more likely to enrol, and if the CBI is successful in improving access to care and financial protection to its members alone rather than all members of the community. Some recent, government-supported schemes have attempted to address this weakness by offering highly subsidized or free membership to the indigent.

2. Local applicability

CBI schemes are complex to implement and sustain:

- CBIs require technical skills to be designed, managed, implemented and sustained.
- Setting the premiums and the benefit package is often problematic: they are rarely based upon reliable cost analysis or sound assumptions regarding the use of hospital services by scheme members⁷⁷.
- CBIs require considerable management skills, and a lack of capacity at a community-level is a threat to their viability⁷⁸.
- Many schemes depend heavily on external assistance; there is a need for local capacity to be built in order to sustain financially viable schemes.

Low enrolment rates in CBIs further threaten their viability, through two distinct mechanisms:

- Low enrolment can jeopardize the financial viability of the scheme if (chronically) sick people or older people with greater need for health care services tend to enrol more than others (i.e. through the process of adverse selection).
- Limited numbers of members prevent the schemes from benefiting from economies of scale that would spread the often considerable administrative costs across a larger group.

Finally, to be viable, schemes need to be within an 'enabling environment'. It has been claimed that strong trust from the community in the implementing organisation, or the persons who manage the scheme is essential⁷⁹. In addition, a functioning health care system with local health providers capable of delivering essential health services to a basic standard, is also needed⁸⁰.

Cultural differences in attitudes towards pre-paying for health care may exist, but they are poorly understood.

3. Scaling up

With the exception of cooperative medical schemes in China, CBI schemes have rarely operated on a substantial scale. Besides, when CBIs are designed or extended to cover a whole population, they become social insurance mechanisms instead, where participation is mandatory.

It has been estimated that on average, CBI schemes cover just 10% of target populations²¹. A review of 258 experiences conducted by the International Labour Organization⁷⁴ noted that the majority of schemes (55%) had fewer than 500 members, and almost 80% had less than 5,000 members. Given the implementation difficulties identified above, substantial questions remain concerning the feasibility of scaling up.

Policy Option 3: Social Insurance

A) RESULTS FROM THE SYSTEMATIC REVIEW

We were unable to identify any study of the effects of social insurance compliant with our review criteria. This may have been due to the fact that the compulsory nature of such schemes, and their nation-wide aspirations result in complex challenges when designing randomized experiments or studies with control sites.

B) DISCUSSION – OTHER TYPE OF EVIDENCE

1. Insights from non-included literature

Populations covered by social insurance benefit from better financial access to health services and at least some protection against catastrophic expenditure. However the equity effects of SHI schemes depends upon their design and implementation processes. Many recently introduced social insurance schemes have proved to be relatively inequitable. Typically SHI schemes start by covering the population employed in the formal sector, many of whom are more affluent than other parts of the population. Thus, in effect, SHI schemes may deepen inequalities, if subsidies are provided to their members only⁸¹. Other studies have emphasized the possible regressiveness of social insurance contributions, in the absence of exemptions or reduced contributions for the poorest⁸². Indeed, high levels of co-payments represent a much higher financial burden for poorer households than more affluent ones⁸³. Finally, inequity may arise due to the unequal geographical coverage of services: Brazil and South Korea are two examples where inequalities between members of the scheme have arisen due to poorer access to health care services in rural areas⁸⁴.

2. Local Applicability

The introduction of health insurance is closely related to the institutional characteristics and managerial capacity of a health system, and more broadly those of the country in which it is introduced.

Usually, middle and high income countries, whose economies have a high proportion of the workforce in formal employment, are able to expand the coverage of social health insurance faster and more effectively, as collection of contributions via the payroll from employers and employees is facilitated⁸⁵. Income levels are also important: people with higher income levels may be more willing and able to pay insurance premiums. The 2000 World Health Report notes that no low-income country had a fully-fledged SHI scheme at the time, while Costa Rica was the only lower middle-income countries to have one.

Though social health insurance schemes can establish their own facilities⁸⁶, they rely usually on existing health infrastructure. Failing to provide health facilities with a minimal quality of care can seriously undermine people's trust in the scheme, and thus

endanger the payment of premiums. The experience of Vietnam highlights the importance of ensuring that providers are supportive of the scheme: in Vietnam treatment was refused to insured people because health providers were still expecting informal payments⁸⁷.

Creating and managing SHI schemes requires human resources with an array of technical skills in social science, health economics, public health management and finance⁸⁸. Even if it is possible to develop skills in the domains of insurance administration, actuarial science and insurance regulation through CBIs or other types of insurance mechanism⁸⁵, the need for adequate human and social capital is large and should not be underestimated⁸⁶.

3. Scaling up

Scaling up and widening the population covered has proven to be a particularly slow development over several decades, even in some East Asian countries with high sustained economic growth rates⁸⁶. An extension of the population covered is associated with the development of the formal economy, together with high and steady growth rates. Urbanization, the magnitude of the state or formal economy, and the level of wealth appear to be three dimensions that dictate the long-term development of SHI⁸⁹. Finally, social cohesion and acceptance of solidarity and redistributive principles have been cited as important factors in reaching universal coverage of a population^{87,90}.

Policy Option 4: Contracting out service delivery

A) RESULTS FROM THE SYSTEMATIC REVIEW

Despite the presence of forms of contracting in many countries and a growing literature on contracting experience, few experiences have been subject to proper evaluation. We identified five papers from three different research studies that met the criteria set for the review, however each of these studies had substantial problems with study design.

1. Key findings

Table 5: Studies of experiences of contracting

Country	Intervention	Study design	Impact on utilisation	Impact on health expenditures	Impact on the poorest	Quality of evidence
Cambodia ^{16,91,92}	Contracting out of services with NGOs	C-RCT	+	-	+	⊕○○
Bolivia ⁹³	Contracting out of a network of health centres and one hospital with NGOs	CBA	+	N/A	N/A	⊕○○
Bangladesh ⁹⁴	Contracting out of primary health care with a parastatal programme.	ITS*	+	N/A	N/A	⊕○○

+ indicates a positive impact on the outcome variable, - a negative impact, and 0 no changes. N/A indicates that data were not available.

Evidence from the three studies suggests that contracting out of service delivery has a positive impact on the overall utilization of services.

In a widely cited study in Cambodia the MoH contracted not-for-profit NGOs to provide health care services in some districts. The pilot project from 1998 to 2002 compared the results of both contracting for services (contracting out) and contracting external management to run public services (contracting in) with services run by public sector district health teams. The authors concluded that significant increases in the utilisation of services were achieved, and that those in contracted out districts were particularly greater than in other districts. Evidence from the same experiment shows that immunization coverage significantly increased⁹².

The Bolivian case, noted in Table 5 above, reports the experience of contracting out a network of eight health centres and one hospital in El Alto, a very poor city located near La Paz. The limited available outcome measures based on the facility's information systems indicated a greater increase in deliveries and bed occupancy rates in the nine contracted facilities compared to the maternity wards of the control hospital.

Finally, a study from Bangladesh⁹⁴ reported the experience of contracting of primary health services (104 Basic Health Units) in a district populated by nearly 4 million in-

habitants. Our re-analysis of available data shows a steep increase in the number of daily average consultations in the Health Units following the start of contracting.

2. Impact on poorest populations

Analysis of data on immunization from the pilot project in Cambodia suggested that the poor did benefit disproportionately under a contracting out regime⁹². This may however not be due directly to contracting out per se but to changes in charging policies introduced by the managing NGOs. It is also arguable that if contracting out is shown to expand access in poor countries, it is by definition increasing access for the poor.

3. Limitations of the evidence

A lack of basic statistical rigour, non-equivalence or absence of control and intervention groups, and limited outcome measures represent important limitations to the validity of these studies. In the case of the Bangladesh study, scarcity of information on this experiment again limits the utility of the findings. Results from the Cambodia study were undermined by several major flaws in the study design¹.

B) DISCUSSION

1. Insights from non-included literature

In addition to the three studies that met our inclusion criteria, a number of other studies have examined the operation of a contractual relationship in depth. Regrettably, these lacked data on the effectiveness of service delivery compared to an alternative delivery model⁹⁵. Other studies compared the cost and quality of contracted services to those provided by the public sector, but only at one point in time. It is therefore not possible to deduce whether there are other systematic differences between the services^{96,97}. Other studies have focused on the contract design and determinants of performance^{98,99}. This latter set of studies emphasized that contract specification is likely to be incomplete, and monitoring difficult. Under such circumstances the motivation of the contractor may be critical. The more remote the point of service delivery, or the more complex the service to be delivered, the more likely it appears that contracts will be governed by informal means.

2. Local applicability

For contracting out service delivery to be a viable option, a pool of potential bidders for the contracts – either NGOs or for profit providers – should be available. Policy makers therefore need to consider the nature of competition in the market: limited competition may make it difficult to replace a poor contractor with a better one. Being aware of this,

¹ The major problems identified by the authors of this review in terms of study design are as follows: i) contracted districts received much more financial support from governments and donors than other districts (see Bushan et al. 2002), ii) the design does not seem to have taken clustering into account, either at the sampling stage or at the analysis stage (yet the limited number of clusters increases the possibility of spurious results), iii) all the districts that were originally randomly selected to be part of the trial were not assigned NGOs

the contractor may not find the threat of being replaced a credible one and may not perform to expected standards.

Government capacity to manage the contract may also be challenging. The broader the services contracted, the harder it will be to precisely define a contract¹⁰⁰. Feasibility of adequately monitoring service delivery in remote areas is also a key implementation issue.

Further, governments may struggle to re-deploy public funds to private providers if available funds are already committed to public services (usually via wages and salaries). This is likely to be an important contributory factor when explaining why most broad scale contracting is seen in post conflict settings (where health care systems have badly deteriorated and there are not substantial issues in terms of redeployment of funds). A number of other experiences show the usefulness of contracting out to private providers to increase access in under-served areas or re-build health services rapidly in a post conflict setting^{18,101}.

3. Scaling up

Questions have been raised regarding the long term desirability of contracting out as an option for service delivery¹⁸. While contracting out appears effective as a means to scale up service delivery in small areas rapidly, there are potential constraints that face these schemes in the longer term. It is unclear, for example, whether capacity exists among non-state providers to scale up their service delivery efforts. There are also concerns that a focus on contracting may encourage donors to by-pass failing or fragile states, thereby overlooking the important role of helping to build the institutional capacity of the Ministry of Health as either a steward or a service delivery organisation.

Policy Option 5: Conditional cash transfers

A) RESULTS FROM THE SYSTEMATIC REVIEW

Six programmes were included in the review of the effectiveness of conditional cash transfer (CCT) mechanisms. Four are well-known Latin American experiences: Programa de Educación, Salud y Alimentación (Progresa) (Mexico)¹⁰²⁻¹⁰⁷, Programa de Asignación Familiar (PRAF) (Honduras)¹⁰⁸, Familias en Acción (FA) (Colombia)¹⁰⁹, Red de Protección Social (RPS) (Nicaragua)¹¹⁰. These four CCT programs are very similar to each other, as they consist of some monetary incentives provided on the condition that a number of requirements are fulfilled by parents and/or children (see Appendix 5). These conditions were defined to enhance the human capital of children and/or uptake of preventive health services for vulnerable groups. We also identified two other CCT programmes from Malawi and Thailand that were small-scale incentive programmes aiming to modify a particular health-related behaviour^{111,112}.

1. Key findings

Conditional cash transfer programmes appear to be an effective way to increase the uptake of preventive services and encourage particular preventive behaviours (see Table 6).

Table 6: Included studies related to experiences of conditional cash transfers

	Study design	Impact on health services uptake	Impact on health outcomes	Impact on health expenditures	Impact on behavioural change	Grade
Progresa^{102,104,105,107,113} Mexico	C-RCT	+	+	N/A	N/A*	⊕○○
PRAF¹⁰⁸ Honduras	C-RCT	+	+	N/A	N/A*	⊕⊕○
RPS¹¹⁰ Nicaragua	C-RCT	+	+	N/A	N/A*	⊕⊕○
FA¹¹⁴ Colombia	CBA	N/A	+	N/A	N/A*	⊕○○
HIV testing Malawi¹¹²	C-RCT	N/A	N/A	N/A*	+	⊕○○
Thailand¹¹¹	CBA	N/A	N/A	N/A*	+	⊕○○

+ indicates a positive impact on the outcome variable, - a negative impact, and 0 no changes. N/A indicates that data were either not available or not applicable.

The Latin American programmes, which combined nutrition and health interventions with monetary transfers, have had positive impacts both on health and nutritional status, as assessed by anthropometric measurements. Several impact assessments also

provide evidence of a positive impact on the uptake of preventive services by both children and pregnant women, although this has been less rigorously assessed.

The objective of the conditional cash transfer scheme in Thailand was to increase uptake of contraception. The very complex setting of this study, and flaws within the study design, weakened the evidence that monetary incentives were successful in increasing contraceptive uptake.

Another intervention in Malawi used monetary incentives to increase the proportion of people who returned to obtain their HIV test results. In this study (despite some methodological flaws), financial incentives were shown to increase the uptake of collecting HIV results.

2. Impact on poorest populations

All Latin American experiments specifically target poor people. Most experiments have targeted the poorest municipalities; within each municipality the poorest have been identified based on the socio-economic indicators available^{104,110,115}. These programmes appear highly effective in reducing inequalities and a promising method of providing a safety net for poor people¹¹⁶.

3. Limitations of the evidence

The overall quality of evidence is stronger than for the all the other mechanisms reviewed. Four out of the 6 evaluations took advantage of the programmes having been designed as randomized trials. Some minor methodological issues were found in several studies, but evaluators have made strenuous efforts to correct them or account for confounding factors^{105,107,110,114}.

However, the causal links in the successful programmes are hard to identify owing to the multiple components of the actual programmes, each of which may have interacted with the others. For instance:

- Regular compulsory meetings with child carers where basic health education and information on hygiene, nutrition principles, etc. are received, may play a role in behavioural changes
- Nutritional supplements are sometimes given to children as part of the intervention (*Progresa*, *Red de protection Social*) and therefore may also directly reduce malnutrition
- Finally the wealth effect created by (sometimes large) monetary transfers can also have direct effects on child health status. Examples of improvements in the quality and quantity of food intake are given for *Progresa*¹¹⁷ and *Red de Proteccion Social*¹¹⁰

Consequently, improved anthropometrical measures or decrease in the probability of falling ill can be caused by many factors, and none of the 'human capital' programmes we included could disentangle one particular effect.

B) DISCUSSION

1. Insights from non-included literature

Unlike other financing schemes, conditional cash transfer programmes are recently introduced schemes that have benefited from well-designed and well-analysed evaluations. Therefore included studies covered most current knowledge of the effects of CCTs. However, an evaluation from Brazil¹¹⁸ which failed to meet the study design requirements, suggested that highly undesirable effects may arise if the requirements of CCT programmes are not carefully defined. In this case, households appeared deliberately to keep their children's nutritional status at a lower level, thus ensuring that the household qualified as a beneficiary of the CCT programme.

2. Local applicability

Conditional cash transfers schemes such as those developed in Latin American countries entail considerable costs and capacity requirements and these can constitute obstacles to programme effectiveness and implementation in low-income settings. These programmes involve relatively complex mechanisms for targeting as well as logistics for the delivery of transfers, besides the need for good coordination with service providers in health and education for the tasks of monitoring and supervision.

In addition, most such programmes rely on a well-functioning supply of health services, and good public infrastructure (roads and access to banks are a prerequisite in Nicaragua¹¹⁹). As much as these programmes try to bridge important gaps in social provisioning for poor households, they are not designed to address problems related to a lack of geographical access to health services (an issue particularly common to sub-Saharan African countries). CCTs can only work where facilities already exist and if they are able to respond to the increase in demand that these programmes might generate.

All CCT programmes that have targeted poor people were able to do so due to up-to-date information systems that provided data on income and population characteristics; alternatively, special surveys were conducted to provide such information. Either way, CCT schemes rely on a capability to identify the poorest populations. This is not usually available in low income settings, where exemption schemes have demonstrated the difficulties of identifying the poor.

3. Scaling up

The financial sustainability of CCT programmes beyond the pilot programmes in low-income settings is subject to debate. CCT programmes can be expensive to operate even though such costs vary substantially: Progresa increases household revenue by almost a third; its equivalent programme in Honduras only resulted in an increase of 4% of household income, but covered 80% of the population. In sub-Saharan Africa where the majority of the population lives in extreme poverty, such programmes would require massive budget resources and have, as a basic prerequisite, the need to develop health systems further.

Finally, and critically, the cost-effectiveness of such programmes compared to more traditional ways of providing preventive health services (such as promotion campaigns or improving the accessibility and availability of preventive health services) has yet to be investigated. Given the financial constraints of most sub-Saharan African countries, providing schools and health care facilities may be a more effective allocation of public spending than cash transfers. Conditional cash transfers appear to show promise as means to achieve a full coverage of a particular intervention; they may also contribute to reducing non-financial barriers to services, where service availability and quality are already good.

Discussion

A) STRENGTHS AND WEAKNESSES OF POLICY BRIEF

This policy brief summarises the findings of a series of systematic reviews. The reviews focused on five financing mechanisms, and searched for studies in low and middle income countries that demonstrated an effect on utilisation, health care expenditure, health outcomes or impact on the poorest in low and middle income countries.

The brief of this study is therefore limited in three ways. First, it reviews only the evidence for a very particular set of financing mechanisms (not all of which may be relevant to all countries). Secondly, it reviews only the evidence generated by specific study designs. While there is clear evidence that the study designs included in this brief are the most robust in providing evidence of effects, other study designs, such as the repeated cross-sectional surveys used by Xu et al⁵², can also provide important insights. Thirdly, the brief only considers evidence from low and middle income countries: in some respects this may make the findings more relevant to policy makers and civil society representatives from these contexts, but it may also mean that significant insights from studies conducted in other contexts have been missed.

For a review of this nature it is important to establish clear boundaries. The five specific mechanisms chosen for this study were selected because they are of considerable current policy relevance and an initial scan of the literature suggested that they were relatively widely researched. As the focus of the brief is quite narrow, it has been possible to be comprehensive and this gives greater confidence that the findings presented are reliable. This brief has only included studies that were robust both in design and execution. Studies were reviewed in depth and quality criteria have been applied in a transparent manner. Further, we have established a clear line of reasoning explaining why and how certain evidence was ranked as higher quality.

Future versions of this brief may be made more useful to policy makers by i) providing a fuller consideration of the contextual issues which influence the effects of different financing mechanisms, ii) considering additional financing mechanisms, such as the fund-

ing of a package of services through general tax revenues and iii) including information on the combined effects of different financing mechanisms. While it would be desirable to extend the brief in this way, the broad literature search conducted in preparation for the reviews summarized here, suggests that there is limited robust evidence related to these issues.

B) STRENGTHS AND WEAKNESSES OF THE EVIDENCE AND NEED FOR FURTHER RESEARCH AND EVALUATION

The brief exposed multiple problems in the quality of the existing literature on most of the mechanisms studied. An extensive range of published studies provided a rich and varied set of information concerning how alternative health financing systems are operating. However, with the exception of the CCT literature, good quality evidence on the effects on utilisation, health outcomes or health expenditures for poorer groups is rare. There is also an obvious lack of well designed evaluations of financing mechanisms in LMICs. Particular weaknesses have been highlighted in each section of the review, but generally these include:

- Poor statistical analysis of time series data
- A lack of analysis of population-wide effects for mechanisms such as CBI and contracting out
- Limited data allowing analysis by sub-groups e.g. socio-economic status, gender or age
- Minimal or no data related to quality of care to complement research regarding other outcomes

Gathering quality evidence on the effect of health financing strategies calls for a number of different types of study design. Impact evaluations of the effectiveness of different financing mechanisms are still sorely needed, particularly for mechanisms aiming to provide risk protection, and for contracting out. The recent studies of CCTs demonstrate that implementing well-designed impact evaluations in this field is possible. Further information related to other dimensions of outcome, such as cost and quality, is also needed. In conducting such evaluations, researchers should be careful to document contextual factors that may be important elements in the success (or otherwise) of an intervention. This will facilitate the application of evidence to other contexts and can help to inform judgements as to why policies did or did not have both intended and unintended effects.

In addition, given the importance of both context and the precise design of a financing mechanism on the ultimate effects, research is also needed to address other relevant questions. Further case study assessment, for example, could enhance our understanding of implementation issues, qualitative studies can provide information about people's attitudes to and experience of different financing mechanisms.

The monitoring of large-scale or national policies is extremely important in order to develop a stronger information base about how these mechanisms work at scale, and to provide information about implementation issues such as capacity problems, and sustainability.

C) APPLYING EVIDENCE FROM OTHER COUNTRY CONTEXTS TO DECISION MAKING

Even when good quality evidence is generated by studies and clear policy-relevant conclusions drawn, it remains difficult to know the precise degree to which such findings can be generalised to other contexts. The checklist in Appendix 6 provides some general questions to help users when considering the relevance of findings to their own context. Discussion in this brief has suggested a number of specific issues that need to be considered when assessing the applicability of evidence on health financing mechanisms to different contexts. These have included:

- *The effectiveness with which the government exercises its stewardship role* (for example the capacity of government to manage complex new financing schemes, identify the poor and manage relations with donors). Local capacity, and in particular government capacity was identified as a critical factor determining the success of all the five financing mechanisms reviewed, and emphasised the complex nature of many of these schemes
- *The level of development of the health system* and the overall accessibility and quality of services in particular, were identified as important to social health insurance and CCT schemes in particular, and relevant also to user fees and CBI. For contracting out, a pool of possible bidders for contracts is also essential, but contracting may work well in contexts where the public health system has badly deteriorated, provided government retains a stewardship role
- *The economic development of a country* and in particular levels of per capita income and participation in the formal labour market appeared to be a particularly important factor influencing the feasibility of social health insurance schemes
- *The fit with existing values and societal attitudes* of any proposed new financing mechanism was observed to be particularly important for user fees, and is also likely to be important for insurance schemes, although the nature of this relationship is not well understood

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Appendix 1: Search strategy

The search strategies for the electronic databases used selected MeSH terms and free text terms relating to printed health financing literature for developing countries.

Some pilot searches led us to use quite general (exploded) MeSH terms in the search strategy; we realized that a number of relevant articles were indexed under very different MeSH terms.

The search in PubMed was restricted to the developing countries listed on the World Bank website, and by selecting all relevant geographical categories as exploded terms.

This search strategy was translated into the other databases using the appropriate controlled vocabulary as applicable.

1	Search "Developing countries"[MeSH] OR "Africa"[MeSH] OR "Central America"[MeSH] OR "South America"[MeSH] OR "Latin America"[MeSH] OR "Mexico"[MeSH] OR "Asia"[MeSH] OR "Commonwealth of Independent States"[MeSH] OR "Pacific Islands"[MeSH] OR "Indian Ocean Islands"[MeSH] OR "Europe, Eastern"[MeSH]
2	Search ("Economics"[MeSH] OR "Economics"[SH] OR "socioeconomic factors"[MeSH]) AND ("Delivery of health care"[MeSH] OR "health services research"[MeSH] OR "health planning"[MeSH] OR "health services "[MeSH] OR "utilization"[SH])
3	Search "Personnel Downsizing"[MeSH] OR "workplace"[MeSH] OR "health planning guidelines"[MeSH] OR "patient freedom of choice laws "[MeSH] OR "preferred provider organizations"[MeSH] OR "provider-sponsored organizations"[MeSH] OR "emergency Medical Service Communication Systems"[MeSH] OR "Genetic Services"[MeSH] OR "Medical Errors"[MeSH] OR Chemicals and Drugs Category[MAJR] OR "Drug industry"[MAJR] OR "epidemiology"[MAJR] OR "Patents"[MAJR] OR "War"[MAJR] OR Anatomy Category[MAJR] OR "Child Abuse"[MeSH] OR ("Technology and Food and Beverages Category"[MAJR] NOT "food supply"[MeSH])
4	Search Practice Guideline[ptyp] OR Letter[ptyp] OR Editorial[ptyp] "Clinical Trial"[ptyp] OR "Clinical Trial, Phase I"[ptyp] OR "Clinical Trial, Phase II"[ptyp] OR "Clinical Trial, Phase III"[ptyp] OR "Clinical Trial, Phase IV"[ptyp]
5	Search "Japan"[MeSH] OR "Korea"[MeSH] OR "Taiwan"[MeSH] OR "New Zealand"[MeSH] OR "Singapore"[MeSH] OR "Israel"[MeSH]
6	Search "1985"[PDAT] : "2005"[PDAT]
7	Search #1 AND #2 AND #6 NOT #3 NOT #4 NOT #5
8	Search "Fees and charges"[MeSH] OR user fee[TIAB] OR user fees[TIAB] OR social insurance[TIAB] OR health insurance[TIAB] OR community-based insurance[TIAB] OR prepayment plan[TIAB] OR prepayment plans[TIAB] OR prepayment scheme[TIAB] OR prepayment schemes[TIAB] OR conditional cash transfers[TIAB] OR cost recovery[TIAB] OR prepayment[TIAB]
9	Search #1 AND #8 AND #6 NOT #3 NOT #4 NOT #5
10	Search #9 OR #7

The search strategies listed below were used for the following databases:

Bibliographic databases

PubMED, EMBASE (Athens), Popline, CAB-Direct (Global Health), Healthcare Management Information Consortium (HMIC), World Health Organization Library Information System (WHOLIS), African Healthline (bibliographic databases on African health issues), IBSS (International Bibliography in Social Sciences, Athens interface)

The Cochrane Central Register of Controlled Trials (CENTRAL), the Database of Abstracts of Reviews of Effectiveness and the EPOC Register (and the database of studies awaiting assessment).

Development studies databases:

ELDIS database: a database of development references designed by the Institute of Development Studies (IDS)

British Library of Development Studies (BLDS): a database of economic and social issues in developing countries

ID21: a database of international development research from the UK

The Antwerp Institute of Tropical Medicine database

Economic databases:

Jstor, Inter-Science (Wiley), ScienceDirect
IDEAS(Repec) for economic working papers.

Spanish and South American databases:

LILACS: Latin American and Caribbean Health Sciences

MEDCARIB: Caribbean Health Sciences Literature

ADOLEC: Literature on Adolescence Health

PAHO: PAHO HQ Library Catalog

French databases:

FRANCIS: a bibliographic database for the social sciences.

BDSP (Banque de Données en Santé Publique): a French database on public health literature

Appendix 2: Study designs admitted in the reviews reported in this brief

The series of systematic reviews reported in this brief admitted only studies with specific types of study design. Admitted studies needed to comprise baseline and follow-up data. Two of the admitted study designs used comparison groups (controlled Before and After (CBA) or randomized controlled trial (RCT)), whilst the third is an Interrupted Time-Series Design. These types of impact evaluation are considered better able to explore whether observed effects are indeed attributable to the intervention or not, and to measure this potential impact¹⁹:

Randomized Controlled Trial (RCT): in individual randomized trials, individuals are randomly allocated to the intervention or control group. Perfect randomization ensures that individuals in each arm will differ only in their exposure to the treatment – all other effects should be distributed equally between the groups.

To avoid contamination bias, or for other practical reasons, some interventions can be randomized not at the individual level but at a community level instead, provided some statistical adjustments are made. They are called Cluster Randomized Controlled Trials (C-RCT).

Controlled Before and after studies (CBA): in this design, data are collected on the control and intervention groups before and after an intervention is introduced (baseline). This design is less reliable than RCTs because estimation of effects can be biased by unidentified differences between the control and study groups.

Interrupted Times-Series studies (ITS): this is a robust method of measuring the effect of an intervention when randomization or the identification of a control group is impractical (e.g. due to a change in policy). Regularly spaced data points are collected before and after the intervention. The impact on an outcome is measured against the pre-intervention trend. The main weakness of this design lies in its inability to rule out the impact of any concurrent events during the period of analysis.

Importantly, ITS methods of analysis are not frequently used. Studies based on longitudinal data tend to use less rigorous methods of analysis. In this review, when we found such studies in our literature search, we re-analysed the data using the ITS methodology²⁸ in order to be able to include them in the review.

Adapted from the EPOC website:

<http://www.epoc.uottawa.ca/FAQincludedstudies2003.pdf> and
<http://www.epoc.uottawa.ca/checklist2002.doc>

Appendix 3: Assessment of study limitations

The Effective Practice and Organization of Care (EPOC) Group of the Cochrane Collaboration provides guidance as to which study designs might be used, and how to assess the quality of studies. Given the specificities of the research area, the reviewers agreed to modify some of the criteria proposed by EPOC. The criteria used in the reviews reported in this brief were as follows:

CBA STUDIES:

1. **Baseline characteristics:** DONE if outcomes are measured prior to the intervention, and no substantial differences were present across study groups (e.g. where multiple pre-intervention measures describe similar trends in intervention and control groups); NOT CLEAR if baseline measures are not reported, or if it is unclear whether baseline measures are substantially different across study groups; NOT DONE if there are differences at baseline in main outcome measures likely to undermine the post-intervention differences (e.g. are differences between the groups before the intervention similar to those found at the post-intervention stage?)
2. **Equivalent control site:** DONE if characteristics of study and control sites are reported and similar (in terms of population, facilities, and external influence characteristics); NOT CLEAR if it is not clear in the paper e.g. characteristics are mentioned in the text but no data are presented; NOT DONE if there is no report of characteristics either in the text or a table OR if baseline characteristics are reported and there are differences between study and control providers
3. **Protection against exclusion or selection bias:** DONE if outcome measures obtained from the whole population or a representative sample of the population (and the control group) which is studied ; NOT CLEAR if not specified in the paper; NOT DONE if outcome measures are not obtained from a representative sample
4. **Protection against contamination:** DONE if allocation is by community, institution, or practice and is unlikely that the control group received the intervention; NOT CLEAR if communication between treatment and control group was likely to occur; NOT DONE if it is likely that the control group received the intervention (e.g. cross-over studies or if patients rather than providers were randomized)
5. **Quality/reliability of outcome measures:** scored DONE if the outcome is obtained from some automated system (e.g. length of hospital stay) or comes from another objective source ; NOT CLEAR if reliability is not reported for outcome measures that are obtained by chart extraction or collected by an individual (will be treated as NOT DONE if information cannot be obtained from the authors); and NOT DONE if the primary data are reportedly of poor quality
6. **Appropriate analysis:** DONE if statistical significance of differences in outcomes are tested and/or the statistical analysis is appropriate

ITS STUDIES

1. **Protection against changes:** DONE if the intervention occurred independently of other changes over time; NOT CLEAR if not specified (NOT DONE if information cannot be obtained from the authors); NOT DONE if reported that intervention was not independent of other changes in time
2. **Appropriate analysis:** DONE if ARIMA models are used OR time series regression models are used to analyse the data and serial correlation is adjusted/tested for OR if reanalysis performed; NOT CLEAR if not specified; NOT DONE if it is clear that neither of the conditions above are not met
3. **No selection bias in the sample framing:** DONE if outcome measures are obtained from the whole population or a representative sample of the population studied; NOT CLEAR if not specified (will be treated as NOT DONE if information cannot be obtained from the authors); NOT DONE if data set is not drawn from a representative sample
4. **Quality/reliability of outcome data:** scored DONE if the outcome is obtained from some automated system (e.g. length of hospital stay) or comes from another objective source ; NOT CLEAR if reliability is not reported for outcome measures that are obtained by chart extraction or collected by an individual (will be treated as NOT DONE if information cannot be obtained from the authors); and NOT DONE if the primary data is reportedly of a poor quality
5. **Number of points specified:** DONE if data for at least 12 months (or more) pre- and post-intervention is used OR reason for less data points is given and it is certain that no seasonal variations occurred
6. **Intervention effect specified:** DONE if point of analysis is the point of intervention OR a rational explanation for the shape of intervention effect was given by the author(s)
7. **Detection bias:** DONE if it is reported that intervention itself was unlikely to affect data collection (for example, sources and methods of data collection were the same before and after the intervention)

RCT STUDIES

1. **Concealment of allocation:** DONE if the unit of allocation is by institution, team or by professional, and any random process is described explicitly, e.g. the use of random number tables or coin flips; OR the unit of allocation is by patient or episode-of-care and there was some form of centralised randomization scheme, an on-site computer system or sealed opaque envelopes were used. NOT CLEAR if the unit of allocation is not described explicitly OR the unit of allocation is by patient or episode of care and the authors report using a 'list' or 'table', 'envelopes' or 'sealed envelopes' for allocation. NOT DONE if the authors report using alternation such as reference to case record numbers, dates of birth, day of the week or any other such approach (as in CCTs) OR the unit of allocation was by patient or episode of care and the authors report using any allocation process that is entirely transparent before assignment such as an open list of random numbers or assignments OR allocation was altered (by investigators, professionals or patients)

2. **Protection against exclusion bias:** DONE if outcome measures obtained for 80-100% of subjects are randomized (or a biased sample) or for patients who entered the trial (do not assume 100% follow up unless stated explicitly); NOT CLEAR if not specified in the paper; NOT DONE if outcome measures obtained for less than 80% of subjects randomized (or a biased, non-representative sample)
3. **Sampling (for cluster-randomized trials):** DONE if sampling takes cluster effects/bias into account or if the sample is large enough to provide robust results; NOT CLEAR if not specified in the paper; NOT DONE if the sampling is too small to provide robust results
4. **Appropriate Analysis (for cluster-randomized trials):** DONE if the analysis accounted for cluster effects/bias; NOT CLEAR if not specified in the paper; NOT DONE if the analysis does not account for cluster effects/bias
5. **Quality/reliability of the data:** scored DONE if the outcome is obtained from some automated system (e.g. length of hospital stay) or comes from another objective source ; NOT CLEAR if reliability is not reported for outcome measures that are obtained by chart extraction or collected by an individual (will be treated as NOT DONE if information cannot be obtained from the authors); and NOT DONE if the primary data is reportedly of a poor quality
6. **Protection against detection bias:** DONE if the authors state explicitly that the primary outcome variables were assessed blindly OR the outcome variables are objective, e.g. length of hospital stay, drug levels as assessed by a standardized test; NOT CLEAR if not specified in the paper; NOT DONE if the outcome(s) were not assessed blindly
7. **Baseline Measurement:** DONE if performance or patient outcomes were measured prior to the intervention, and no substantial differences were present across study groups (e.g. where multiple pre-intervention measures describe similar trends in intervention and control groups); NOT CLEAR if baseline measures are not reported, or if it is unclear whether baseline measures are substantially different across study groups; NOT DONE if there are differences at baseline in main outcome measures likely to undermine the post intervention differences (e.g. are differences between the groups before the intervention similar to those found post intervention?)
8. **Protection against contamination:** DONE if allocation is by community, institution or practice and it is unlikely that the control received the intervention; NOT CLEAR if professionals are allocated within a clinic or practice and it is possible that communication between experimental and group professionals could have occurred; NOT DONE if it is likely that the control group received the intervention (e.g. cross-over trials or if patients rather than professionals were randomized)

Appendix 4: Selection process

24 125 papers identified

604 papers selected

USER FEES	RISK PROTECTION	CONTRACTING OUT	CCT
351 papers selected	176 papers selected	40 papers selected	37 papers selected
25 papers appraised	1 paper appraised	5 papers appraised	13 papers appraised
17 papers synthesised	1 paper synthesised	5 papers synthesised	10 papers synthesised

Appendix 5: Details of requirements of included CCT programmes

	Primary Education	Secondary Education	Health visits (pregnant women)	Health visits (children)	Nutrition supplements	Compulsory health education workshops	Other types of conditionalities
Progresa ^{102,104,105,107,113} Mexico	√	√	√	√	√	√	–
PRAF ¹⁰⁸ Honduras	√	–	√	√	–	–	–
RPS ¹¹⁰ Nicaragua	√	–	–	√	√	√	–
FA ¹¹⁴ Colombia	√	√	–	√	–	√	–
HIV testing Malawi ¹¹²	–	–	–	–	–	–	HIV tested people go back to get their results
Thailand ¹¹¹	–	–	–	–	–	–	Sexually active people use a contraceptive method

Checklists

1. OVERVIEWS OF SYSTEMATIC REVIEWS (SUCH AS THE POLICY BRIEF)

Should you have confidence in the overview?

1. Did the overview address explicitly a sensible range of policy or management questions?
2. Was the framework used to organize the questions and reviews sensible?
3. Were the criteria used to select reviews sensible?
4. Was the search for relevant reviews detailed and reasonably exhaustive?
5. Were assessments of the relevance and quality of the reviews reproducible?

What are the results?

6. What are the main results?
7. How much confidence can be placed in the results? (See Checklist 3 for assessing the quality of evidence and the strength of recommendations)

What are the implications of these results?

Based on what you know now, what are the main implications of this overview for decisions for which you are responsible?

8. Are the results applicable to your setting? (See Checklist 6 for assessing applicability.)
9. What assumptions have you made about your local context, including assumptions about the presence of modifying factors, need (prevalence, baseline risk or status), values (the relative importance of the potential outcomes or consequences), costs, and the availability of resources.
 - How confident are you in these assumptions?
 - Which of these assumptions might need to be confirmed with additional evidence?
 - What kind of evidence is needed?
10. Were all of the important policy or management options considered?
11. Were all of the important outcomes (consequences) considered?
12. Are the net benefits (the sum of the potential benefits and harms) worth the costs?
13. How confident are you in this judgement?

2. CHECKLIST FOR SYSTEMATIC REVIEWS (SUCH AS THE LAY HEALTH WORKER REVIEW)

Should you have confidence in the review?

1. Did the review address explicitly a sensible policy or management question?
2. Were the criteria used to select studies sensible?
3. Was the search for relevant studies detailed and reasonably exhaustive?
4. Were assessments of the relevance and quality of studies reproducible?

What are the results?

5. Are the results similar from study to study?
6. If not, is there a compelling explanation for the differences that were found?
7. What are the main results?
8. How much confidence can be placed in the results? (See Checklist 3 for assessing the quality of evidence and strength of recommendations.)

What are the implications of these results?

Based on what you know now, how would you respond to the questions that this review addresses within the context of your work?

9. Are the results applicable to your setting? (See Checklist 6 for assessing applicability.)
10. What assumptions have you made about your local context, including assumptions about the presence of modifying factors, need (prevalence, baseline risk or status), values (the relative importance of the potential outcomes or consequences), costs and the availability of resources
 - How confident are you in these assumptions?
 - Which of these assumptions might need to be confirmed with additional evidence?
 - What kind of evidence is needed?
11. Were all important outcomes (consequences) considered?
12. Are the net benefits (the sum of the potential benefits and harms) worth the costs?
13. How confident are you in this judgement?

3. QUALITY OF EVIDENCE AND STRENGTH OF RECOMMENDATIONS

(Note: this checklist has been provided to enable you to be aware of the questions that have been asked by the individuals who prepared the GRADE evidence profiles. Specially trained researchers are usually involved in the preparation of GRADE evidence profiles)

How confident are you that the estimated effects (size of the impact) are correct for each important outcome (consequence)?

Positive answers to the following questions would reduce your confidence:

1. Were the study designs that were used at high risk of bias (i.e. were there systematic errors)?
2. Did the studies have important limitations?
3. Were there important inconsistencies in the results across studies?
4. Were the estimates of effects imprecise?
5. Are the people and interventions dissimilar to your own setting?
6. Were surrogate or proxy outcome measures used?
7. Were indirect comparisons (between studies) used?
8. Was there a high risk of publication bias?

Positive answers to the following questions would increase your confidence:

9. Was there a strong association between the intervention (policy option) and the outcome?
10. Was there evidence of a dose-response relationship?

Overall, how confident are you that the estimated effects (size of the impact) are correct for all of the most critical outcomes (i.e. the most important consequences)?

11. How confident are you that the estimated effect is correct for the critical outcome for which you have the least confidence?

What would you recommend doing?

12. What policy or management option (or action) would you recommend?

How confident are you that the net benefits of implementing this recommendation are worth the costs? (Positive answers to the following questions would reduce your confidence.)

13. Is the evidence of low quality? (This might not lower your confidence, if your recommendations involve *not* doing something)
14. Are the estimates of the anticipated effects so imprecise that it is difficult to know whether the net benefits are worth the costs?
15. Is there substantial uncertainty about the values that different people who will be affected will place on the most important outcomes?
16. Are the expected net benefits small?
17. Are there substantial costs (including implementation costs)?

4. INSUFFICIENT EVIDENCE

Is there insufficient evidence to be confident about the impacts of implementing the policy or action?

Positive answers to the following questions suggest the need for well-designed field trials or planned delays² in rolling out or scaling up an intervention:

1. Is the intervention potentially ineffective or harmful?
2. Are there important uncertainties about potentially important benefits, harms or costs?
3. Would wide-scale implementation result in significant and irretrievable fixed costs?
4. Would evaluating the impact of the planned policy or action represent good value for money?
5. Are the necessary resources for undertaking a proper impact evaluation available? If not, can they be obtained?
6. Would it be possible to collaborate with other countries to strengthen the evaluation?
7. Is evaluating the impact of this policy or action a priority?

² Delays are common during the rolling out or scaling up phases of an intervention. Rigorous evaluations are possible if these interventions are planned (e.g., using random allocation to determine who gets the intervention first, or where it should be located) and the intended outcomes are measured

5. EQUITY

What impact is the policy or action likely to have on disadvantaged populations and equity in your own country or setting?

Disadvantages should be considered in relation to each of the following potentially relevant dimensions: place of residence, race (i.e., ethnic origin), occupation, gender, religion, education, socioeconomic status, and social network and capital (PROGRESS).

1. Are there plausible reasons for anticipating differences in the relative effectiveness of the intervention in disadvantaged settings within the country?
2. Are there likely to be different baseline conditions within the country, so that the problem would be more or less important in disadvantaged settings within the country?
3. Are there likely to be different baseline conditions in disadvantaged settings within the country, so that the absolute effectiveness would be different?
4. Are there important considerations that should be given to implementing the intervention to ensure that inequities are not increased and that they are reduced, if possible (e.g. in terms of ensuring access in disadvantaged settings?)

Would the intervention be likely to reduce or increase health inequities within the country, or would it result in no change?

6. APPLICABILITY

Are the results likely to be applicable to your setting?

1. Are there important differences in the structural elements of health systems (i.e., governance, financial and delivery arrangements) between where the research was done and where it could be applied that might mean an intervention could *not* work in the same way?
 - *e.g., Research on the effectiveness of bulk purchasing arrangements in lowering prices for prescription drugs was done in countries with no concentration in the ownership of pharmacies, whereas you may work in a country where a pharmacy monopoly exists*

2. Are there important differences in on-the-ground realities and constraints (i.e., governance, financial and delivery arrangements) between where the research was done and where it could be applied that might substantially alter the potential benefits of the intervention? And can these challenges be addressed in the short-term to medium-term?
 - *e.g., Research on the effectiveness of a team-based approach to maternity care in reducing both maternal and child morbidity was undertaken in countries with midwives and traditional birth attendants, whereas you may work in a country where neither type of health provider is common*

3. Are there likely to be important differences in the baseline conditions between where the research was done and where it could be applied? If so, this would mean that an intervention would have different absolute effects, even if the relative effectiveness was the same.
 - *e.g., Research on the effectiveness of a strategy for promoting HIV testing among pregnant women was completed in countries where less than 10% of pregnant women were offered HIV testing, whereas you may work in a country where 85% of pregnant women are offered HIV testing*

4. Are there important differences in the perspectives and influences of health system stakeholders (i.e., political challenges) between where the research was done and where it could be applied that might mean an intervention will not be accepted or taken up in the same way? And can these challenges be addressed in the short-term to medium-term?
 - *e.g. Research on the effectiveness (and safety) of nurse practitioners in substituting for physicians when providing routine medical care for children, was based in countries with shortages of physicians and weak medical associations, whereas you may work in a country with a surplus of physicians and a very strong and vocal medical association*

7. SCALING UP

Are there important challenges that will need to be addressed when rolling out or scaling up the policy or action?

1. How complex is the intervention and does this have implications for scale up?
2. What are the total costs of expanding coverage of the intervention and sustaining it and what are the implications for scale up?
3. What are the requirements that the intervention imposes on government capacity (e.g., effective regulatory capacity) and the implications for scale up?
4. What requirements does the intervention place upon managers, healthcare professionals/providers and users, and what are the implications for scale up?
5. Would widespread implementation of the intervention be likely to have important impacts on the healthcare system or other sectors and, if so, what are the implications for scale up?
6. Is the intervention likely to be difficult to sustain or are its effects likely to change over time? For example, is it likely that the intervention will have deteriorating benefits without the ongoing training and support necessary to ensure that it is properly implemented?