What factors affect take up of voluntary and community-based health insurance programmes in low- and middle- income countries?

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PROTOCOL

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Contents

List of abbreviations

3ie	International Initiative for Impact Evaluation
CBHI	Community-Based Health Insurance
CI	Confidence Interval
CPCI	Conference Proceedings Citation Index
EED	Economic Evaluation Database
EPPI-Centre	Evidence for Policy and Practice Information and Co-ordinating Centre
GNI	Gross National Income
HI	Health Insurance
HMIC	Health Management Information Consortium
ICDDR,B	International Centre for Diarrhoeal Disease Research, Bangladesh
IDCG	International Development Coordinating Group
ILO	International Labour Organization
LMIC	Low and Middle Income Countries
MeSh	Medical Subject Headings
MHI	Micro Health Insurance
MIA	Micro Insurance Academy
OOP	Out of Pocket
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
SEP	Socio-economic Position
SSCI	Social Science Citation Index
UHC	Universal Health Coverage
UNDP	United Nations Development Programme
WHO	World Health Organization
WTP	Willingness to Pay

Abstract

The penetration of commercial or public contributory health insurance to the informal sector is very poor and the scaling of successful local interventions of Community-based health insurance (CBHI) seems to be one of the promising approaches to remedy this situation. However, the existing information about the determinants of such success is lacking. There is no coherent understanding of an ideal way to implement and sustain such local efforts. Lately, there has been a proliferation of thinking about the demand for insurance and medical care, and some attempts have been made to understand demand for voluntary health insurance like CBHI in low-income countries (ILO, 2002).There seems to be few literatures pertaining to the patterns of uptake of such insurance. Evidence on determinants of enrolment with CBHI comes mostly from recent econometric modelling to predict influences of individual and household characteristics on enrolment decisions (Ito and Kono, 2010; Morsink and Geurts, 2011; Bonan et al., 2012). A few qualitative studies inform and complement studies on determinants of enrolment (Criel and Waelkens, 2003; De Allegri et al., 2006; Basaza et al., 2008), while others used mixed method approaches (Ozawa and Walker, 2009).

The research question for the proposed systematic review is the identification of key parameters that determine the uptake of voluntary and community-based health insurance in low- and middle-income countries. Our review will also cover factors affecting re-enrolment in CBHI schemes. We will follow a search strategy, using online databases related to thematic areas in the objective including social science, economics and medical science. We will search specific electronic databases which will be further supplemented by hand searching, citation tracking, and personal communication including grey literature.

The determinants of CBHI uptake would be assessed using a broad evidence base (including both quantitative and qualitative). We plan on using the PROGRESS-Plus framework of Kavanagh et al. (2008) so as to interpret the data through an equity lens viz. Place of Residence, Ethnicity, Occupation, Gender, Religion, Education, Social Capital (including peer experience with insurance, and specifically claims), Socio-economic position (SEP), Age, Disability, Sexual orientation, other vulnerable groups (e.g. disabled, HIV/AIDS, etc.). We will supplement this with topic-specific determinants such as previous exposure to insurance, having followed insurance education campaigns, and financial literacy in general (i.e. previous experience with microfinance in the broad sense – credit and savings). For all included studies in addition to describing their study design, we will also assess their quality. We will assess the quality of included studies using checklist (Waddington et al., 2012), making judgments on the adequacy of reporting, data collection, presentation, analysis and conclusions drawn. It is important to assess the methodological quality of individual studies (i.e. validity assessment) as it may affect both the results of the individual studies and ultimately the conclusions reached from the body of studies.

A success of this project is also linked to our ability to collecting the information that is scattered in many data sources, analysis of the data and translation of this analysis to a set of coherent general guidelines for successful implementation of voluntary health insurance among the poor in low income countries. Through the identification of groups particularly within South and South East Asia that are working on CBHI as well as through the course of the review; We aim to emphasize the creation of knowledge translation tools e.g. websites, policy briefs, newspapers, articles that can reach the end-line users such as policy-makers,

donors and civil society organizations through conference presentations, policy briefs and contributing to the updating and maintenance of existing webpages. This would be enabled by an advisory group comprising of policy-makers, donors, methodology expert and other researchers active in the area of initiatives for pro-poor insurance coverage in LMIC.

1. Background

1.1 Aims and rationale for review

Most healthcare spending in developing countries is borne by healthcare-seekers through out-of-pocket (OOP) means. India is a good example: 70 percent of health spending is private; 86 percent of which is OOP (World Bank, 2009; Selvaraj et al., 2012). Households in India frequently finance such OOP by borrowing money with interest, not only for inpatient care but also for outpatient care and even for maternity-related costs (Binnendijk et al., 2012). Health care financing in Bangladesh reflects the same picture: 64 percent of health spending is private; 88.3 percent of which is OOP (Report on the Australian Leadership Awards Fellowships Program, 2011).This inequitable and inefficient health financing situation persists in other low-income countries as well. The solution proposed by WHO and other international bodies has been to strive toward universal health coverage (UHC), notably through prepayment and risk pooling mechanisms in lieu of payments at the point and time of service delivery (James and Savedoff, 2010; World Health Organization, 2010). Such a coverage could of course be reached in several ways, notably through mandating (putting in place legal obligations on all citizens to pre-pay for health services through insurance) or through subsidies (that would be used to deliver services free-of-charge to care-seekers, or to pay the cost of insurance premiums covering certain benefits) or through voluntary affiliation. No low-income country has so far been able to apply UHC based on obliging all the population to pay premiums. Attempts to subsidize entire population have also been rare and such UHC has been partial. The penetration of health insurance in most low-income countries also remains very low [for example; in India, insurance uptake is below 5 percent (Ma et al., 2008)]. One possible explanation for low insurance uptake is that poorer individuals in the informal sector doubt their own ability to enforce contracts with insurance companies. Other factors explaining uptake of insurance or enrolment into insurance are: how one perceives one's own risk; an understanding of the product; and social factors such as trust in financial institutions as one pays into a fund where services are delivered just in case some event occurs (Acharya et al., 2012).

A solution to such a problem has been the practice for people to own and run community-based health insurance (CBHI) schemes at community level (Dror and Jacquier, 1999). Such an arrangement implies that the community plays an important role in mobilizing, pooling, allocating, managing and/or supervising health-care resources. CBHI have been implemented extensively throughout Rwanda and Tanzania through government support, as well as in India, Afghanistan, Nepal, Burkina-Faso, Mali, Senegal, Nigeria, and elsewhere. Development organisations have increasingly recognised the role that micro health insurance (MHI) can play as a poverty reduction tool (ILO, 2006; UNDP, 2007), and CBHI is one form of MHI.

As a social protection mechanism, CBHI schemes have been shown to be effective in reducing out-of-pocket payments of their members, and in improving access to health services (Tabor, 2005). Many schemes do fail. Low percentages of enrolment were observed in a study of five CBHI schemes in East and southern Africa (Musau, 1999). In the four schemes, enrolment percentages varied between 0.3 percent and 6.5 percent of the target population; one scheme was found to be quite small with only 23 members of a target population of 27 cooperative society members. In July 1999, a project was launched, establishing 54 CBHI schemes in three districts of Rwanda (henceforth called Rwanda Project). By the end of the first year of

operation, the enrolment rate in the three districts reached 7.9 percent (88,303 members of a total target population of 1,115,509) (Schneider and Diop, 2001). A study of four of 16 CBHI schemes in the area of Thies in Senegal indicated that in the year 2000, the average household enrolment percentage in these villages was 68 percent, with enrolment rates varying between a minimum of 37.4 percent and a maximum of 90.3 percent (henceforth called the Thies Study) (Jutting, 2001). A study in Lao PDR also shows that only 1.7 percent of the population is enrolled in CBHI showing that coverage rates are quite low (World Bank, 2010). Another study also shows that low take-up rates of micro health insurance in India despite its perceived need and the enthusiasm of microfinance practitioners (Ito and Kono, 2010). Problems such as unaffordable premium levels, cultural aspects (De Allegri et al., 2005), mistrust in the health care system, and inferior quality of care (Criel and Waelkens, 2003) impede its success. The variations in membership of voluntary schemes suggests that there are factors that limit individuals from enrolling and if CBHI aims to improve access to care for the poor then it is important to analyse the factors of better performing schemes and understand the reasons why poor households insure and address issues explaining why others remain uninsured.

1.2 Definitional and conceptual issues

1.2.1 Low-and middle-income countries

Low-income and middle-income economies are those countries defined as earning less than equal to $4,035 by the World Bank. This review will use the World Bank list from 2011 to define low and middle-income country (Appendix 2.1).

1.2.2 Voluntary and community-based health insurance

Interventions will only be considered for inclusion in this review if they are voluntary, contributory and community-based, and conducted in low and middle income countries.

 "Voluntary" in our context means an informed and independent choice of the members to enrol (or not); and "contributory" means that all members pay an equal or varied insurance premia. The review excludes mandatory insurance affiliation, regardless whether the obligation originates from a different transaction (e.g. an insurance policy added onto a microcredit loan), or compulsory payments that may apply either to individuals linked to group participation.

Community health insurance (CHI) is defined as 'any not-for-profit insurance scheme that is aimed at primarily at the informal sector and formed on the basis of a collective pooling of health risks'. CHI has been classified by ownership, management, membership, and risk coverage (Appendix 2.2). The identification of CBHI is inclusive and covers all relevant types of community based programs and is thus suitable for the purpose of this review.

1.3 Policy and practice background

The purpose of a health financing system is; to mobilise resources for the health system, to set the right financial incentives for providers, and to ensure that all individuals have access to effective health care. Other aspects are that individuals should not be impoverished as a result of doing so, nor should they be unable to get care because they cannot pay for it. Most high-income countries rely heavily on general taxation (for example, the UK) or mandated social health insurance (France, Germany etc.) for financing their health expenditures. Low-income countries depend mostly on out-of-pocket payments by service users at the point and time of service, and some also rely heavily on international donor support. The various forms of health insurance all have serious limitations in poor countries.

These include difficulties in raising significant revenues, the unpredictability of funding, inequalities in risk-sharing and the level of protection offered, and difficulties in improving the quality of the service. There are also specific concerns regarding their contribution to the equity and efficiency of health systems as a whole (Oxfam International, 2008). For example, increasing access to quality health services is one of the core objectives of Nepal Health Sector Programme 2010-2015 (NHSP II). Major progress has been made with the introduction of the Free Health Services Programme, (certain services free at the point of service delivery), as well as other schemes dedicated for specific health conditions and risks such as the Safe Motherhood scheme Aama Programme. Nevertheless, out-of-pocket payments, the most regressive and unfair way of fiProgram health care, still remains the principle means of health financing in Nepal with 55 percent share of total health care expenditure[1]. Bangladesh, Cambodia and Laos have similar health financing characteristics. Out-of-pocket expenditure is the main source of health financing in these countries and the contribution of government to health spending is low. In such circumstances, the intervention we chose to review is community-based health insurance (CBHI) in low- and middle- income countries. This is an arrangement in which communities voluntarily mutualise risks and resources in locally-managed healthcare funds (Dror and Jacquier, 1999).

1.4 Research background

Evidence on determinants of enrolment with CBHI comes mostly from recent econometric modelling to predict influences of individual and household characteristics on enrolment decisions (Ito and Kono, 2010; Morsink and Geurts, 2011; Bonan et al., 2012). A few qualitative studies inform and complement studies on determinants of enrolment (Criel and Waelkens, 2003; De Allegri et al., 2006; Basaza et al., 2008), while others used mixed method approaches (Ozawa and Walker, 2009).

Msuya et al. (2004) states that the focus of CBHI uptake decisions to be at household level, and this demand for insurance is framed in the expected utility theory, in which perceptions of the magnitude and probability of risks weigh heavily on insurance uptake decisions. Thornton (2009) finds that in Nicaragua, both the health status of household members (specifically, whether the head of household is chronically ill), and the probability of future health events occurring (e.g. the number of children in the household) are significantly and positively associated with uptake of health insurance. The technical arrangements made by the scheme management have also shown to influence people's perception of personal benefits. One example is the unit of enrolment. In a WHO Study (Carrin, 2003) almost half of the schemes surveyed had the family as the unit of membership, a measure introduced to avoid the problem of adverse selection[2] . In the Rwandan Project Study, large households with more than five members had a greater probability to enrol in the CBHI schemes than others (Schneider and Diop, 2001). The explanation given is that contributions were kept flat, irrespective of household size up to seven members. Thus the average contribution per household member was therefore less than for smaller families inducing greater enrolment.

This is however a partial description of demand for insurance, particularly in developing countries. Msuya et al. (2004) and Bendig and Arun (2011) find that uptake of micro insurance is positively related to household income and size. This is consistent with rational decision making behaviour of the households since the

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[1] Ministry of Health and Population (2009). Nepal National Health Accounts.

[2] Tendency for households with a sick family member to enrol

amount of contribution is independent of the family size. With regards to income, Gumber (2001), Ranson (2001) and Chankova, Sulzbach and Diop (2008) examined uptake by dividing households into income quintiles; they consistently found that income was a significant positive determinant only among the highest and lowest quintiles. Regarding household size, specifically in the Indian context, the explanations included the increased number of dependents in larger households. Dror et al. (2007) find evidence that willingness to pay for health insurance remains relatively constant over all households with more than six members, which might imply a desire of households to insure all members of the family.

In a developing country context, education levels may be an important determinant of uptake as insurance may be a new concept. Sinha, Patel and Gandhi (2006) and Ito and Kono (2010) show that the level of understanding among the target members (which might be related to education) of insurance schemes have positive significant effect on uptake rates. Schneider and Diop (2001) and Chankova et al. (2008) find that households headed by persons with formal education are more likely to join insurance than others.

Recent quantitative research has shed more light on enrolment decisions: (a) knowing peers that claimed, an informal trust-building factor, is the most important in explaining uptake of microinsurance (Morsink and Guerts, 2011); (b) households having higher ratio of sick members are more likely to purchase insurance, explaining the existence of adverse selection and ex post moral hazard (Ito and Kono, 2010); (c) insurance literacy has no impact , but marketing treatment (that alleviate the potential financial barriers to entry) has a positive association with the take up decisions of households (Bonan et al., 2012).

One study also talked about supply-side barriers relate to schemes' design and management (for example, lack of clarity among scheme staff regarding the scheme's rules and processes, and requirements that claimants submit documents to prove the validity of their claims) to accessing benefits in a community-based insurance scheme which affect take-up decision in the scheme (Sinha et al., 2005).

A number of papers have examined the impact of CBHI / MHI schemes on health and financial outcomes among members (Dror et al., 2005; Dror et al., 2006; Gnawali et al., 2009; Aggarwal, 2010).

Acharya et al. (2012) conducted systematic reviews on the impact of social health insurance in LMIC and found that health insurance may prevent high levels of expenditure. However, the impact was smaller for the poorer population. That is, the insured poor may be undertaking higher OOP expenditure than those who are not insured. The review also looked at the factors influence the uptake of social health insurance and found that the uptake of insurance may depend on how one perceives one's own risk, understanding of the product and social factors such as trust in financial institutions as one pays into a fund where services are delivered if just in case some event occurs.

Spaan et al. (2012) conducted systematic reviews on the impact of health insurance in Africa and Asia and concluded that it offers some protection against the detrimental effects of user fees and a promising avenue towards universal health coverage.

Ekman's systematic review (2004) found little convincing evidence of voluntary CBHI to be a viable option for mobilizing resources and providing financial protection in low-income countries. The main policy implication of the review is that these types of community financing arrangements are, at best, complementary to other more effective systems of health financing. However, the evidence base is limited in scope and questionable in quality.

However, a logical precursor to understanding the impact of MHI is an understanding of the patterns of uptake of such insurance. Acharya et al. (2012) systematic review did study the factors which influence the uptake of social health insurance but not specific to community-based health insurance. To the best of our knowledge no systematic reviews exists on this topic at present, and there seems to be no on-going work to review the literature on this topic either. This is why such a review would be needed to be conducted.

In fact, Cole et al. (2012) conducted a systematic review on take-up and impact of index-based micro insurance, and found that levels of financial literacy, liquidity, trust, marketing and product design factors affect demand for index-based micro insurance products.

With the above background, our systematic review will focus on several of demand and supply-side factors (for example household income, awareness about insurance, schemes' design and management etc.) affecting take up of voluntary and community-health insurance in low- and middle-income countries. For this we will isolate the studies which focused on voluntary uptake of insurance in low and middle income countries. Decisions about which data will be extracted from a wide range of designs including observational studies, randomised controlled trials or non-randomised controlled trial studies is to be guided by the primary review question i.e. the factors affecting the participation in voluntary and community-based health insurance. After that we will synthesize all the factors that affect take up of voluntary and community based health insurance programmes from the set of included studies into various sub-heads such as household and individual characteristics, scheme-related factors, social capital, supply-side factors and Institutional factors.

Numerous factors can explain households' insurance enrolment decisions. The factors that enable or impede individuals from enrolling can be categorized into five broad heads namely households or individual characteristics, scheme related factors, social capital, supply-side factors and institutional factors.

Figure 1 details the process of the theory of change of factors affecting uptake and enrolment of voluntary and community-based health insurance schemes.

Figure 1: Process to the theory of change of factors affecting uptake and enrolment of voluntary and community-based health insurance schemes
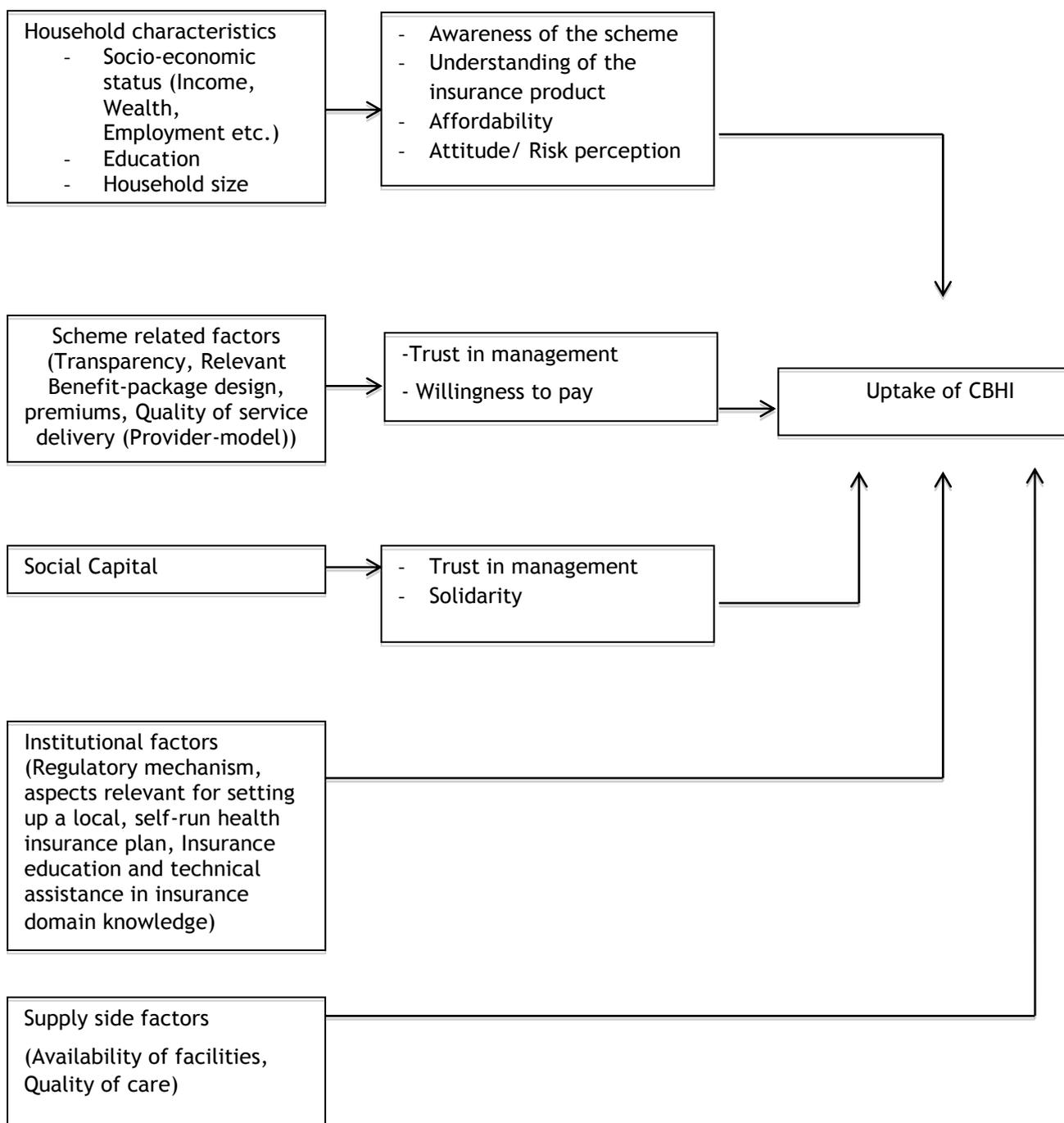
Generally, insurance demand studies use expected utility theory to explain individuals' decision of whether or not to insure. This theory states that insurance demand is a choice between an uncertain loss that occurs with a probability when uninsured and a certain loss like paying a premium. Expected utility theory assumes that people are risk averse implying that the more risk averse individuals are, the more insurance coverage they will buy. But this theory is silent about the association between households' socio-economic status and insurance enrolment. State-dependent utility theory suggests that consumers' utility level and tastes are influenced by their state, such as health or socio-economic status. Accordingly,

people may have different degrees of risk aversion, which can influence their insurance decision. For example, Individuals who perceive their health status as very good may be less likely to enrol than individuals who perceive their health status as less than optimal. Households with higher socio-economic status are in a good position to afford (paying premium) or may have better understanding of the benefits of being insured. Poverty literature also suggests that poor have liquidity constraints that cause them to remain uninsured even when they may be better off with insurance.

The New theory of consumer demand for health insurance (based on prospect theory: consumers prefer an uncertain loss to a certain loss of the same expected magnitude) suggests that consumers who voluntarily purchase unsubsidized health insurance are better off.

As suggested by the endowment effect and status quo bias, the decision to insure may be complicated for individuals particularly in areas where insurance is a new concept and illiteracy rates are high. Poor individuals will insure if they perceive the benefits of insurance (for example, access to better quality care) as high than the cost related to giving up being uninsured.

Social capital is also important in the CBHI context. Informal trust-building factors are equally or more important in explaining demand for insurance. Trust in insurance can relate to trust in the insurer or trust in the specific insurance product. If there is solidarity in the community or trust in management, it will positively influence individuals' decision to enrol in CBHI.

Institutional factors such as the technical arrangements made by the scheme management also influence people perception about the benefit of the scheme. Many CBHI operate within weakly defined legal and political systems, and are based on mutual, non-written agreements that are monitored and enforced by members. CBHI members often lack the technical capacities to manage an insurance scheme and negotiate with providers for better care.

Scheme related factors such as benefit package design, premium and transparency also affects people's decision to enrol. If the scheme is transparent regarding the schemes' rules and processes, requirements that claimants submit documents to prove validity of their claims, relevant to poor people's needs such as inclusion of out-patient care in the benefit package will create trust about the financial management of CBHI and positively affect the willingness to pay for insurance. Providers' inferior quality of service delivery also does appear as a crucial factor for non-enrolment and an important reason for non-renewal of membership in a CBHI scheme.

Supply-side factors such as availability and access to good quality primary and secondary health care facilities in the area may attract more members to enrol in the scheme.

The following table summarises different theories on decision making. For each theory, it is shown that how individual preferences will affect their motivation to insure, such that they reach their desired outcomes, as well as the factors that predict insurance purchase (column 3) or a decline of health insurance (column 4).

Table 1: Theories of decision-making applied to the health insurance context			
Theories	**Motivation**	**Effects predicting purchase of insurance**	**Effects predicting decline of insurance**
Consumer choice	Maximize utility	High income; high user fees Low premium insurance	Low income; high premium Low user fees
Expected utility	Maximize expected utility through certainty	Uncertainty Risk aversion	Risk seeking
State-dependent utility	Maximize expected utility through certainty	Weak health and anticipate high insurance pay-off	Healthy and anticipate low insurance pay-off
Prospect	Prospect of gain in reference to risk level	Prospect of loss in reference to risk level is certain	Prospect of loss is uncertain
Cumulative prospect	Prospect of gain probability of illness	Over-weighting small of illness	Under-weighting probability
Endowment/status quo/veil of experience	Higher utility versus reference point	Insurance benefits higher than cost of insurance and of giving up user fees	Risk-aversion against new and unknown
Regret and disappointment	Minimize regret and disappointment	Loss aversion High probability of illness	Conservative preferences Low probability of illness
Time preferences	Maximize utility	High value of future protection	High value of current consumption
Poverty	Maximize utility	High risk aversion when near to poverty line	Unaffordable premium
Social capital	Maximize utility	Strong social capital Trust in the insurance system	Weak social capital Mistrust in the insurance system

Source: Schneider, 2004

1.5 Objectives of the systematic review

The main objective of this systematic review is to identify and assess the importance of different enabling or limiting factors that determine the uptake (and re-enrolment) of voluntary and community-based health insurance (CBHI) in LMIC.

More specifically, this systematic review will:

- develop a framework for different categories of factors influencing uptake;

- provide a summary of existing knowledge relating to each of these categories, including interpretation of data through an equity lens; and

- set an agenda for essential primary research (stand-alone research or evaluation of current and future initiatives)

1.6 Authors, funders, and other users of the review

This systematic review is enabled by financial support from 3ie, awarded through a call for proposals on pre-defined themes.

Dr. Pradeep Panda (PP) will be the lead PI for this SR, and will provide content area expertise and review experience, participate in the development of the protocol and drafting of the final review. He will serve as a third party decider of disagreement over inclusion/exclusion of studies for the review. He will serve as team leader for systematic review methodology. He will lead the development of the protocol, oversee the search and participate in the subsequent screening of abstracts and studies, data extraction, conduct analysis/synthesis and lead the drafting of the first draft of the full review. Statistical analysis or other relevant method of data analysis (if required) will be led by him, with inputs from DD, TK, ID and JK. He will also lead the report writing effort of this review and manuscript for publication, to which ID, TK, DJ, JK and DD will also contribute.

Dr. Iddo Dror (ID), a PI of this SR, will provide additional content area expertise to the development of the protocol and to the drafting of the final review. He will serve as a third party decider of disagreement over inclusion/exclusion of studies for the review. He will participate in the dissemination activities- writing policy briefs and manuscripts for publication and guiding these items to the right target audience. He will play a leading role in systematic review methodology. He will participate in the development of the protocol, external reviews and search process, participate in the subsequent screening of abstracts and studies, conduct analysis/synthesis and contribute to review drafting and dissemination activities.

Dr. Tracey Pérez Koehlmoos (TK) will serve as lead mentor in systematic review methodology. She will assist the development of the protocol, advice on the external review and search processes, and participate in the analysis/synthesis, review drafting and dissemination activities.

Dr. S.A. Shahed Hossain (SH) will search for information on CBHI to designing and implementing search strategy for this review. He will conduct retrieval from the grey literature and oversee retrieval from the published literature.

Mr. Denny John (DJ) will participate in the development of the protocol, screening of the abstracts and studies, data extraction and analysis and drafting of the final review. He will also support Dr. S.A. Shahed Hossain in literature retrieval.

Dr. Jahangir A.M. Khan (JK) will participate in the screening of the abstracts and studies, analysis and drafting of the final review.

Prof. Dr. David Dror (DD) will provide additional content area expertise to the development of the protocol and to the drafting of the final review. He will participate in the dissemination activities- wiring policy briefs and manuscripts for publication and guiding these items to the right target audience. DD will provide mentorship in this SR methodology. He will contribute to the development of the protocol, conduct analysis/synthesis and contribute to review drafting and dissemination activities.

2. Methods used in the review

2.1 Type of review

A simple mixed systematic review process will be adopted. We will search for studies using the delineated databases and search terms. The resulting list of studies will be screened using inclusion and exclusion criteria relevant for the review i.e. we will isolate the studies which focused on voluntary uptake of insurance in low and middle income countries. Grey literature which includes a number of working documents, technical and policy documents will also be reviewed using the same key wording tools which we will identify through screening relevant websites and contacting authors. Then there will be a synthesis of the study findings included in the review. A coding tool, based on the EPPI-reviewer Platform, characterising studies and collecting information on context, mechanism and outcomes, will be used to collect information from the included studies.

2.2 User involvement

2.2.1 Approach and rationale

We plan to engage potential users[3] in all aspects of the review, from the design and process of the review to the dissemination and application of findings. We created an advisory panel that includes experts in health systems and policy, the non-state sector, developing country health systems and systematic review methodology.

2.2.2 User Involvement in designing, conducting the review and interpreting review results

The advisory group will provide input into the progress of the review at four key points:

1) Protocol: Members will have the opportunity to assess the scope of the review including the conceptual framework, search strategy and draft inclusion and exclusion criteria.

2) Searching: We will ask our advisory group members to identify any research or ongoing projects that are relevant to answering the review question and to distribute information about the review on their websites and networks, if appropriate.

3) Interim findings: We will ask the advisory group to comment on the preliminary findings of the review. We will ask them to consider:

a) how we have applied the conceptual framework to answer the review question(s)

b) if the recommendations for future research are relevant and appropriate to the review topic.

The feedback and recommendations from the advisory group will be incorporated into the final report.

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[3] Denny John, one of the review authors is incharge of implementation of CBHI schemes in India and Nepal at MIA.

4) Dissemination: We will ask the advisory group to inform how and to whom we can disseminate the findings of the review to ensure it reaches the audience it is intended for.

2.2.3 User involvement in communication and dissemination of review results

The success of the project will be linked to our ability to translate the findings into action within developing countries applying or interesting in applying community-based health insurance programmes as described in the Buxton-Hanney Payback Framework (Hanney, 2005). We will identify groups particularly within South and South East Asia that are working on CBHI as well as through the course of the review. We will emphasize on the creation of knowledge translation tools (Appendix 2.3) that can reach the end-line users such as policy makers, donors and civil society organizations through conference presentations, policy briefs, and contributing to the updating and maintenance of existing webpages. We have formed an advisory group of nine members comprising of policy-makers, donors, methodology expert and other researchers active in the CBHI field (Appendix 1.1). We hope to benefit from their guidance with the ultimate objective of both creation of scientific knowledge and transferring that knowledge to the end-users such as policy makers, donors and civil society organizations. We will reach out to the members of the advisory group by sharing protocol, preliminary findings and dissemination activities not only to update them on the progress of the review but also to receive their feedback about the usefulness of the plan and the important aspects of the findings that would be turned into policy briefs or emphasized in policy briefs.

2.2.4 Any known plans for further interpretation and application

MIA as a CBHI facilitating organisation would be in a position to apply some of the evidence of the systematic review as part of its facilitation process. We will try to apply the findings of this systematic review in the MIA's existing work project locations; India and Nepal from the South Asia, Cambodia and Vietnam from East Asia & Pacific region; and Tanzania and Nigeria from Sub-Saharan Africa, where possible.

MIA, the lead institution of this review, is active in micro-insurance research, implementation, and advocacy. The fact that MIA being part of this systematic review also is a CBHI implementing organisation should be interpreted as a conflict of interest. We aim to minimise the effect of such a conflict through reviewers of different backgrounds making judgments about studies, for example an expert and a non-expert (such as involving members from other institutions such as ICDDR,B) in every stage of the research ensuring that any perceived bias from the lead institution would be able to be discussed and addressed by the team. It is well-known that systematic reviews by their nature reduce bias, and we are confident that our protocol design and review process, as well as the work with our advisory group, will help minimize any perceived bias about this review.

2.3 Identifying and describing studies

2.3.1 Defining relevant studies: inclusion and exclusion criteria

Time and language of the report: The main search language will be English. However, we will endeavour not to exclude documents on the basis of language. Potentially important studies in Spanish, French, German or any other languages would be included; and we will seek assistance with their translation keeping in mind the availability of resources. We will limit our search from 1990 onwards as the type of insurance in question was not widely available pre 1990 and also the published literature on the topic gained momentum from this period onwards only.

Study design:

We will include a wide range of research methodologies to include quantitative and qualitative work (RCT, experimental designs with control groups, surveys, interviews, case-studies etc.). Observational studies such as surveys, cohort studies, case-controlled studies and case studies (with or without economic or equity analyses) will be considered potentially suitable. While we do not expect to find many, randomised and non-randomised trails, where treatment groups are compared to a suitably selected counterfactual (control groups), with well identified methods of comparison pre-post, simple difference, d-in-d, other quasi experimental methods and randomised experiments, and interrupted time series will also be considered potentially suitable for inclusion, as would be any relevant studies from identified reviews. Publications describing and/or analysing theoretical frameworks will not be included in the review, however would be referred to inform background and framework of review question. The research questions would be answered using broad evidence base (including quantitative and qualitative), as outlines in Table 2.

Table 2: Type of research questions and appropriate study designs

Type of Research question	Type of study		Sources of appropriate evidence to address the question
	Quantitative study	Qualitative study	
Demand-side questions • What are various household and individual level characteristics that can affect the take up of CBHI • What are factors related to social capital in the community that affects the up take	✓	✓	• Observational studies addressing the nature and magnitude of the problem i.e. studies that tests associations between characteristics of people and their context with whether they do or do not take up voluntary or community-based health insurance programmes. • Effectiveness studies, for example, experimental design studies with sub-group analysis or regression analysis assessing the characteristics influencing take up. • Qualitative studies exploring views and experiences with health insurance.
Supply-side questions • What are scheme-related factors affecting access to CBHI • What role do institutional factors play in increasing the uptake • What other supply side factors enhances CBHI uptake		✓	• Effectiveness studies, for example, experimental design studies with sub-group analysis or regression analysis assessing scheme-related characteristics influencing take up. • Qualitative studies of views and experiences with health insurance schemes (for example descriptive studies that listen to people talk about voluntary and community-based health insurance programmes. Those studies will identify factors that people see for themselves.) • Qualitative studies of the acceptability of interventions.
What factors affect re-enrolment and sustainability of clients to CBHI	✓	✓	• Observational studies addressing the nature and magnitude of the problem • Qualitative studies exploring views and experiences with health insurance • Qualitative studies of the acceptability of interventions

Source: Adapted from Snilstveit et al., 2012

What factors affect take up of voluntary and community based health insurance programmes in low- and middle- income countries? A systematic review (Protocol)

Criteria for including studies in the review [PICOS]:

Types of participants (P)

Members who voluntarily choose to affiliate and pay a premium of the CBHI schemes will be included, as well as those individuals offered to join such schemes and decline to do so. CBHI participants will be included if they take place in low and middle income countries (World Bank, 2011). All type of studies that have been taken place in low and middle income countries (LMIC) as defined by the World Bank (2011) will be included in this review, and will be sorted according the type of addressed research questions. Following the World Bank's main criterion for classifying countries, i.e. gross national income (GNI) per capita, we will consider all countries that are classified as low or middle income (Appendix 2.1).

Types of interventions (I)

Interventions will only be considered for inclusion in this review if they are voluntary, contributory and community-based, and in low and middle income countries.

"Voluntary" in our context means an informed and independent choice of the members to enrol (or not); and "contributory" means that all members pay an equal or varied insurance premia. The review excludes mandatory insurance affiliation, regardless whether the obligation originates from a different transaction (e.g. an insurance policy added onto a microcredit loan, or compulsory payments that may apply either to individuals linked to group participation).

Community health insurance is defined as 'any not-for-profit insurance scheme that is aimed at primarily at the informal sector and formed on the basis of a collective pooling of health risks. CHI has been classified by ownership, management, membership, and risk coverage (Appendix 2.2). The identification of CBHI is inclusive and covers all relevant types of community based programs and is thus suitable for the purpose of this review.

Types of comparisons (C)

Although comparisons may not always be feasible, this review will include comparisons between those individuals who join CBHI programmes and those that do not if applicable.

Types of enabling and limiting factors

As a means of structuring the review and for identifying entry-points for intervening on relevant factors, this systematic review aims to develop a comprehensive framework for likely enabling and limiting factors.

This systematic review will answer the following specific questions with reference to the uptake of CBHI scheme:

1. Demand side factors:

    - What are various household and individual level characteristics that can affect the take up of CBHI

    - What are factors related to social capital in the community that affects the up take

2. Supply side factors

- What are scheme-related factors affecting access to CBHI
- What role do institutional factors play in increasing the uptake
- Which other supply side factors enhances CBHI uptake

3. What factors affect reenrolment and sustainability of clients to CBHI

Exclusion criteria:

Studies will be excluded if

1. Study is published before 1990
2. Study is a policy analysis, or opinion piece
3. Study is not in a low or middle income country
4. Study is on other health insurance mechanisms (private and social)

2.3.2 Identification of potential studies: Search strategy

We will follow search strategy, using online databases relating to the thematic areas (Appendix 2.1) in the objective including social science, economics and medical science(s). We will search specific electronic databases related to these areas and also other databases focusing in general to human development, academic literatures, abstracts, citations, reports and so on. The search will be further supplemented by hand searching, citation tracking, personal communication and will include grey literature. Our search will date from 1990 until the present time. We shall explore the manner in which CBHI are reported to operate in LMIC as well as the literature around the circumstances that led to this intervention coming into being. We will restrict our search to studies published in the English language.

Search strategies for electronic databases are being developed using the thesaurus or index terms specific for the data bases combined with selected MeSH terms and free text terms related to thematic areas like community-based health insurance or health insurance as a whole. A provisional search strategy including terms to be used is given below (Appendix 2.1). We will translate this search strategy into the other databases using the appropriate controlled vocabulary as applicable. Dr. S.A. Shahed Hossain (SH) is a trained and experienced search strategist. He is a founding member of the Centre for Systematic review at ICDDR,B and is the only trained search strategist in Bangladesh. SH will apply his knowledge of searching for information on CBHI to designing and implementing search strategy for this review.

The major data bases to be searched are:

1. EconLit, Economic Evaluation Database (EED), EconBase (Elsevier), Business Source Premier (EBSCO), Cochrane Library

2. **MEDLINE/PUBMED or OVID, EMBASE/OVID,** Sociological Abstracts, Health Management Information Consortium (HMIC), Eldis, ISI web of Knowledge [(including Science Citation Index Expanded (SCI-Expanded, Social Science Citation Index (SSCI), LILACS, JOLIS, Conference Proceedings Citation Index (CPCI_S), Conference Proceedings Citation Index – Social Science & Humanities (CPCI_SSH)] and POPLINE.

3. Google and Google scholar

4. Global Health (EBSCO), IDEAS (http://ideas.repec.org/), JSTOR

5. ProQuest, PROSPERO, CRD, University of York

6. Scopus, SSRN, ScienceDirect (Elsevier), Cambridge University Press, Kluwer on-line, Synergy (Blackwell), ingenta, InterScience (Wiley), Scirus

7. Database of Abstracts of Reviews of Effectiveness (DARE),The EPPI-Centre database including BiblioMap, TRoPHI (Trails Register of Promoting Health Interventions), 3ie databases

Other searches

In addition, in order to have a comprehensive search outcome we will search grey literatures for published or unpublished reports, records, communication or note from relevant websites of institutions, organisations, personal contact or official correspondences. For example, searches will be made on the web pages of organizations including STEP, CGAP, SEWA, CIRM, IFMR. We will hand search reference lists of all papers and relevant reviews identified (Appendix 2.5) and contact authors of relevant papers regarding any further published or unpublished work.

We will contact the following organizations for relevant studies:

a. Department for International Development (DfID)

b. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

c. Management Sciences for Health (MSH)

d. Micro Insurance Academy (MIA)

e. Micro Insurance Network

f. International Health Economics Association (IHEA)

g. International Labour Organization (ILO)

h. Population Services Inc. (PSI)

i. RAND Corporation

j. The World Bank (WB)

k. United States Agency for International Development (USAID)

l. World Health Organization (WHO)

Conference proceedings will be checked, including:

- Annual International Conference on Health Economics, Management & Policy, Athens, Greece; 2002-2010 (http://www.atiner.gr /docs/Health.htm)

- Annual Micro insurance Conference (www.munichrefoundation.org)

- Asian Conference on Micro insurance (http://www.asiainsurancereview.com/pages/conference_details.asp?id=14 9)

- Canadian Conference on Global Health (http://www.csih.org/en/conference/arCBHIves.asp)

- GTZ-ILO-WHO-Consortium on Social Health Protection in Developing Countries, 2005,2006,2007 (Paris, Kigali)(http://www.socialhealthprotection.org/)

- Malawi Conference on Micro Health Insurance in Africa (http://www.microfinancefocus.com/news/2009/09/10/malawi-conference-on-micro-health-insurance-in-africa/)

- Proceedings from DAVOS conferences and Global Symposium on Health Systems Research (HSR)

- The Annual World Bank Conference on Development Economics (http://go.worldbank.org/6YVGDJNWM0)

- World Congress on Health Economics by International Health Economics Associations (IHEA): 1st to the 7th conference(http://www.healtheconomics.org/congress/)

This list will be further expanded to include organizations engaged in micro health or community based health insurance activities.

A complete Medline/PubMed is given in the Appendix 2.1.

Search management: Electronic search results or publications available digitally will be uploaded to review software, (preferably EPPI-Reviewer) for screening, reviewing, coding and further management by the review team.

2.3.3 Screening studies: applying inclusion and exclusion criteria

Inclusion and exclusion criteria will be applied successively to (i) titles and abstracts and (ii) full reports. Two reviewers will independently screen the titles and abstracts identified by the search strategy to remove citations which are clearly not relevant to the review. Full reports will be obtained for those studies that appear to meet the criteria or where we have insufficient information to decide. The inclusion and exclusion criteria will be re-applied to the full reports and those that do/did not meet these initial criteria will be excluded. ('EPPI-Reviewer' software will be used for screening, coding and analysing, using a single web location to house the documents and monitor progress of the review.) Disagreements will be resolved through discussion with a third reviewer, and where necessary with the review group. A second round of double screening (Appendix 2.6), with two independent reviewers, of the full text of remaining citations to identify included studies will take place. EPPI-Reviewer will be used to manage our double screening and data abstraction. Flow of studies will be presented using a PRISMA flowchart diagram to provide information on the selection of studies (Moher et al., 2009).

2.3.4 Characterising included studies

A coding tool, based on the EPPI-reviewer Platform, characterising studies and collecting information on context, mechanism and outcomes, will be used to collect information from the included studies (Appendix 2.6). Characteristics of included studies will be coded including:

- how the report was located;

- the publication language;

- the country in which it was carried out;

- the area where it focused on;

- the characteristics of the population;

- details of the intervention site;

- details about study design and sample size;

- findings of included studies according to the themes in the framework, as well as any new emerging themes

We will consider equity across selected outcomes in the review (i.e. if the poorest and least poor achieve the same benefit, similarly whether urban and rural groups obtain same benefit) using the Equity checklist (Appendix 2.8). We will apply selected components of the PROGRESS-Plus (Oliver, 2008) framework and conduct subgroup analyses to assess the role of inequalities in determining uptake, using methods previously reported by Kavanagh, 2009.

2.3.5 Identifying and describing studies: quality assurance process

Report on pilot/pretesting, internal procedures for QA/moderation and external procedures

Once studies are selected for inclusion a process of study quality appraisal and data extraction takes place. Decisions about which data should be extracted from individual studies will be guided by the review question. We will assess the quality of included studies using checklist (Waddington et al., 2012), making judgments on the adequacy of reporting, data collection, presentation, analysis and conclusions drawn. The checklist is included in Appendix 2.7. Studies will not be excluded based on their quality, but rather the quality will be used to determine the strength of the evidence so that the strength of recommendations can be appropriately tempered. Teams of two authors will independently appraise studies meeting the inclusion criteria. Any discrepancies in quality appraisal will be resolved through discussion, and any discrepancies that cannot be resolved will be discussed with a third author.

2.4 Synthesis of evidence

2.4.1 Overall approach to and process of synthesis

Given the divergence among the empirical studies lies in the methodology used, some studies being based on a quantitative approach and others being privileged qualitative analyses, the studies would be analysed separately and then would be brought together. As Figure 2 illustrates, we would conduct the first two syntheses and then use them to create synthesis 3.

Figure 2: Review Process
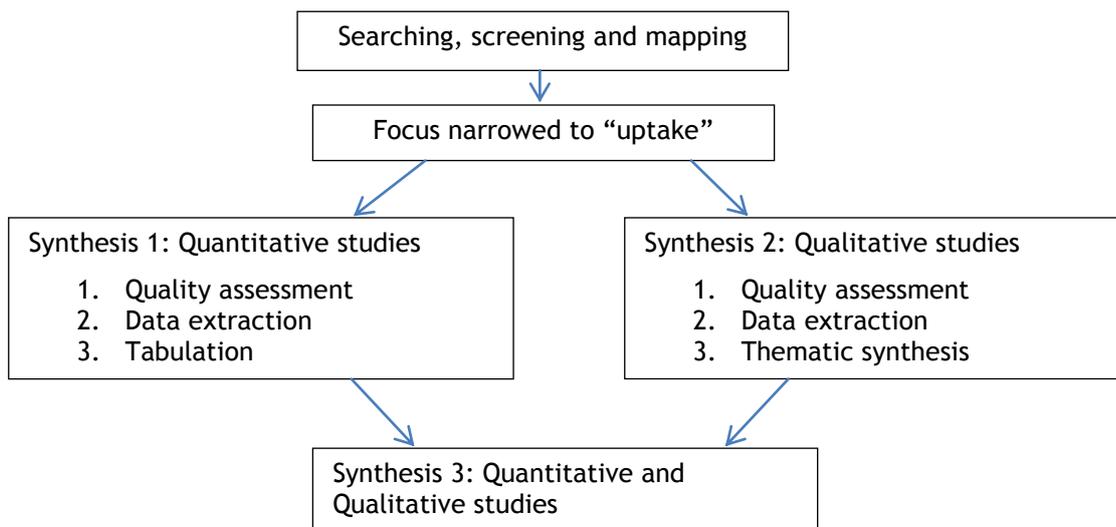
Synthesis of Quantitative Studies

Given the expected heterogeneity among the quantitative studies, meta-analysis would not be conducted. Therefore, we would report the review as a descriptive narrative. Tables summarising key features of study objectives, design, context, findings would be presented. The studies would be tabulated for each important information point such as sample size, the direction, magnitude and statistical significance of findings. The building blocks gained from the tables would be used as elements for grouping and integrating study findings.

Studies focus on impact of enabling and/or limiting factors on uptake; for example, studies examining the impact of marketing on take up, would be dealt separately.

Synthesis of Qualitative Studies

The approach to synthesis would draw on the work of Thomas and Harden (2008), known as thematic synthesis. Data synthesis would be carried out in three stages:
1. During the first stage, data would be coded line by line.
2. These codes would then be used to generate descriptive themes, which would be to a large extent reflect the themes in the original paper.
3. The final stage would use these descriptive themes to develop analytical themes which would include the generation of new interpretive constructs or explanations.

All stages would use established principles for analysing qualitative data. Recording of the process of development of themes would be explicit to ensure our methodology is both transparent and rigorous. For an in-depth description of thematic synthesis, see Thomas and Harden (2008).

While our framework domains represent a useful way of organising the findings of the review (Appendix 2.3), the initial approach to analysis would not assume any domains in order to provide an opportunity for the data to speak for themselves, as recommended by Thomas and Harden (2008). In this way we would make sure that codes and themes emerge from the data rather than limiting ourselves to retrieving

only those codes and themes that correspond to pre-specified domains. If this approach uncovers additional domains, we would revise our framework accordingly. Subsequently, findings for each domain would be summarised in tabular and narrative forms.

Synthesis of Quantitative and Qualitative Studies

The findings of the quantitative and qualitative studies would be integrated drawing on the framework domains (Appendix 2.3) and subsequently findings for each framework domain would be summarised in tabular and narrative form, using parallel synthesis (Noyes et al., 2008).

We expect variations in the study findings due to the various sources of heterogeneity, such as differences in the types of CHBI activities within the intervention and outcome measurements. There may be variations in study setting (rural versus urban), the socioeconomic status (e.g. income quintiles), and the cultural and health service environment of the country in which the study was conducted. We will try to explore possible heterogeneity due to the above mentioned variables using meta-regression analysis if feasible. If sufficient studies are not identified, we will explore heterogeneity via different techniques, either visually via bubble plots or via box plots (displaying medians and ranges).

We will consider equity across selected outcomes in the review (i.e. if the poorest and least poor achieve the same benefit, similarly whether urban and rural groups obtain same benefit). We will apply selected components of the PROGRESS-Plus (Oliver, 2008) framework described above and conduct subgroup analyses to assess the impact of interventions on health inequalities, using methods previously reported by Kavanagh, 2009. To address questions about the impact of interventions on inequalities, we would inspect trials for outcome data related to subgroups unequally affected by social determinants of health.

If there are sufficient included studies, we will carry out subgroup analysis to determine whether the interventions work in the disadvantaged and these studies would be grouped according to the characteristics of CBHI.

If sufficient data are available we will undertake sensitivity analysis to ensure robustness of the data by looking at quality of data and study design.

2.4.2 Criteria for identifying important review results

The review results based on study quality, and contribution to establishing theoretical framework will be discussed in an ongoing fashion among the Review Authors of this systematic review. This enabled all concerned to stay abreast of emerging findings and evaluate the overall direction of the review.

2.4.3 Deriving conclusions and implications

Applicability, transferability and external validity are important components of field interventions and will be discussed substantially in the discussion section. The challenge for capturing information on uptake of CBHI is that each CBHI intervention and its population exist in a unique context. This study will strain to capture elements of success across settings, populations and political situations. Some of the strain would be lessened through the comments from members of Advisory Group through a pre-formed checklist (Appendix 2.9). Given that voluntary and community-based health insurance uptake remains an area of great interest as a means of increasing access to healthcare and improving primary health care delivery in low and middle income countries, we anticipate benefits

from this review to include finding those models for which there are sound theoretical bases for causal assumptions, good evidence of intervention design, reach, implementation and sustainability.

To assess the generalizability of the results, data will be extracted and recorded from individual studies which include details of: characteristics of the population, details about the study design, sample size, intervention site, any other specific data and/or information which could affect the interpretation of the study results or which may be helpful in assessing how applicable the results are to different population groups or other settings.

Findings from each framework domain will be summarised in tabular and narrative form. In summarising and interpreting findings and drawing preliminary conclusions, we will pay particular attention to the combined effects of different domains and possible interactions between them. It also includes evaluating the differential impact of these factors on poorer households, on rural and urban communities and also on women and children.

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Appendices

Appendix 1.1: Authorship of this report

The authorship of this report will be in following order:

Dr. Pradeep Panda, Director Research, Micro Insurance Academy (MIA)

Dr. Iddo Dror, Advisor to Senior Management, MIA

Dr. Tracey Perez Koehlmoos, Head of the Health and Family Planning Systems Programme, ICDDR,B

Dr. S.A. Shahed Hossain, Associate Scientist, ICDDR,B

Mr. Denny John, Deputy Director Project Implementation, MIA

Dr. Jahangir A.M. Khan, Head of Health Economics Unit, ICDDR,B

Prof. Dr. David Dror, Chairman and Managing Director, MIA

Details of Advisory Group membership

1) Dr. Rattan Chand, Chief Director (Statistics), Ministry of Health and Family Welfare, Govt. of India. As a statistician he has the relevant skills to contribute to the quality of any statistical analysis of the outcomes of the systematic review, e.g. meta-analysis of RCT studies.

2) Dr. Michael Kent Ranson, Alliance for Health Policy and Systems Research, World Health Organisation. He has experience of working in both India and Bangladesh. His PhD study at LSHTM focused on a voluntary health insurance scheme in India, i.e. SEWA, and he is also a visiting faculty at the James P Grant School of Public Health, Dhaka.

3) Dr. Julia Watson, Senior Health Economist, Department for International Development. Her role may include identifying priorities and crafting policies that support these priorities. It may also include public outreach and advocacy.

4) Dr. K.R. Viswanathan, Climate Change and Development Division, Embassy of Switzerland. He supports in design, planning, monitoring, review and steering of initiatives supported by the Government of Switzerland in India in the area of climate change and development as a part of the Global Cooperation Programme. Being active in the policy community, he can support in providing a forum to talk about our findings with officials from other ministries.

5) Dr. Hilary Thomson, Senior Investigator Scientist, Social and Public Health Sciences Unit, UK's Medical Research Council. As a Systematic Review expert, she can help in developing a greater understanding of how research evidence can be used and knowledge translation strategies are to be developed to reduce the gap between 'what is known' and 'what needs to be done'.

6) Prof. (Dr.) Arnab Acharya, Professor, School of Government and Public Policy, OP Jindal Global University, India. He is convened to provide comments of the analytic framework, research questions, eligibility criteria, and search terms so that quality and usefulness of the review can be enhanced.

7) Dr. Sukumar Vellakkal, Assistant Professor, South Asia Network for Chronic Disease, Public Health Foundation of India. He will contribute to research and methods for this systematic review as well as to influence policy through their existing networks.

8) Dr. Henri Van Den Hombergh, UNICEF, New York. Dr. Henri has significant experience in working with the policy makers in the LMIC.

9) Dr. Rumana Huque, Assistant Professor, Department of Economics, Dhaka University, Bangladesh. She is also a member of Technical Advisory group of Public-Private Partnership in Health Sector, Ministry of Health and Family Welfare, Bangladesh. Given the importance of the issue and interest in the area, she can contribute at different stages of the review and play an important role in the policy making process.

Details of Review Group membership
The authors will be supported by Dr. Ruth Koren, Professor of Medical Sciences, Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel.

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Conflicts of interest
MIA, the lead institution of this review, is active in micro-insurance research, implementation, and advocacy.

However, as Sir Iain Chalmers suggests, all proposals for new research and reports of new research should begin (and end) by using or doing systematic reviews of all the existing evidence relevant to the research questions being addressed[4].

Many authors of systematic reviews also conduct primary research on the same topic, and some journals (e.g. Lancet) have begun informing potential contributors that, regardless of the type of research being reported, the journal will expect reports of research to begin and end with systematic reviews of other research addressing the same questions (Clark, S., & Horton, R., 2010). As such, we do not see an inherent problem with the lead institution being active in the field of the research question; on the contrary, we see it as complementary to MIA's main research work.

Further, as suggested by The Cochrane Collaboration in a note about reducing bias[5], "All of us have prejudices that might affect our judgments about whether studies should be included or excluded. Experts may have pre-formed opinions which might affect their assessments of the relevance and validity of studies. On the other hand, it's difficult to make judgments if you know nothing at all about a topic. Other people might have opinions about the value of research published in particular journals, or research carried out in particular institutions.

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[4] Written evidence submitted by Sir Iain Chalmers, James Lind Initiative (PR 47) to the UK Parliament - http://www.publications.parliament.uk/pa/cm201011/cmselect/cmsctech/writev/856/m47.htm

[5] See http://www.cochrane-net.org/openlearning/html/mod8-4.htm

One way to minimise the effect of these personal biases is to have reviewers of different backgrounds making judgments about studies, for example an expert and a non-expert. For this to work, however, both reviewers need to be willing to accept that they may have biases and to listen to the other reviewer's views!"

We have taken this on board, and involve members from other institutions (ICDDR,B etc.) in every stage of the research, ensuring that any perceived bias from the lead institution would be able to be discussed and addressed by the team. Finally, systematic reviews by their nature reduce bias, and we are confident that our protocol design and review process, as well as the work with our advisory group, will help minimize any perceived bias about this review.

Appendix 2.1: Search strategy for electronic databases

Population is categorized by countries and by income group: Economies are divided according to 2011 GNI per capita, calculated using the World. The groups are: low income, $1,025 or less; lower middle income, $1,026 - $4,035; upper middle income, $4,036 - $12,475; and high income, $12,476 or more.

(http://data.worldbank.org/about/country-classifications/country-and-lending-groups, accessed on September 22, 2012)

Complete search strategy for MEDLINE/PUBMED

Line(s) 1-7   : Related to Population

Lines(s) 9-12   : Related to intervention

Lines (s) 14-19 : Outcomes related

Lines (s) 21   : Equity related

Limits: Humans, English, 1990 till date

1. "developing country"[tw] OR "developing countries"[tw] OR "developing nation"[tw] OR "developing nations"[tw] OR "developing population"[tw] OR "developing populations"[tw] OR "developing world"[tw] OR "less developed country"[tw] OR "less developed countries"[tw] OR "less developed nation"[tw] OR "less developed nations"[tw] OR "less developed population"[tw] OR "less developed populations"[tw] OR "less developed world"[tw] OR "lesser developed country"[tw] OR "lesser developed countries"[tw] OR "lesser developed nation"[tw] OR "lesser developed nations"[tw] OR "lesser developed population"[tw] OR "lesser developed populations"[tw] OR "lesser developed world"[tw] OR "under developed country"[tw] OR "under developed countries"[tw] OR "under developed nation"[tw] OR "under developed nations"[tw] OR "under developed population"[tw] OR "under developed populations"[tw] OR "under developed world"[tw] OR "underdeveloped country"[tw] OR "underdeveloped countries"[tw] OR "underdeveloped nation"[tw] OR "underdeveloped nations"[tw] OR "underdeveloped population"[tw] OR "underdeveloped populations"[tw] OR "underdeveloped world"[tw] OR "middle income country"[tw] OR "middle income countries"[tw] OR "middle income nation"[tw] OR "middle income nations"[tw] OR "middle income population"[tw] OR "middle income populations"[tw] OR "low income country"[tw] OR "low income countries"[tw] OR "low income nation"[tw] OR "low income nations"[tw] OR "low income population"[tw] OR "low income populations"[tw] OR "lower income country"[tw] OR "lower income countries"[tw] OR "lower income nation"[tw] OR "lower income nations"[tw] OR "lower income population"[tw] OR "lower income populations"[tw] OR "underserved country"[tw] OR "underserved countries"[tw] OR "underserved nation"[tw] OR "underserved nations"[tw] OR "underserved population"[tw] OR "underserved populations"[tw] OR "underserved world"[tw] OR "under served country"[tw] OR "under served countries"[tw] OR "under served nation"[tw] OR "under served nations"[tw] OR "under served population"[tw] OR "under served populations"[tw] OR

"under served world"[tw] OR "deprived country"[tw] OR "deprived countries"[tw] OR "deprived nation"[tw] OR "deprived nations"[tw] OR "deprived population"[tw] OR "deprived populations"[tw] OR "deprived world"[tw] OR "poor country"[tw] OR "poor countries"[tw] OR "poor nation"[tw] OR "poor nations"[tw] OR "poor population"[tw] OR "poor populations"[tw] OR "poor world"[tw] OR "poorer country"[tw] OR "poorer countries"[tw] OR "poorer nation"[tw] OR "poorer nations"[tw] OR "poorer population"[tw] OR "poorer populations"[tw] OR "poorer world"[tw] OR "developing economy"[tw] OR "developing economies"[tw] OR "less developed economy"[tw] OR "less developed economies"[tw] OR "lesser developed economy"[tw] OR "lesser developed economies"[tw] OR "under developed economy"[tw] OR "under developed economies"[tw] OR "underdeveloped economy"[tw] OR "underdeveloped economies"[tw] OR "middle income economy"[tw] OR "middle income economies"[tw] OR "low income economy"[tw] OR "low income economies"[tw] OR "lower income economy"[tw] OR "lower income economies"[tw] OR "low gdp"[tw] OR "low gnp"[tw] OR "low gross domestic"[tw] OR "low gross national"[tw] OR "lower gdp"[tw] OR "lower gnp"[tw] OR "lower gross domestic"[tw] OR "lower gross national"[tw] OR lmic[tw] OR lmics[tw] OR "third world"[tw] OR "lami country"[tw] OR "lami countries"[tw] OR "transitional country"[tw] OR "transitional countries"[tw]

2. Afghanistan OR Bangladesh OR Benin OR "Burkina Faso" OR Burundi OR Cambodia OR "Central African Republic" OR Chad OR Comoros OR "Democratic Republic Congo" OR Eritrea OR Ethiopia OR Gambia OR Guinea OR Haiti OR Guinea-Bisau OR Kenya OR "Korea" OR "Kyrgyz Republic" OR Liberia OR Madagascar OR Malawi OR Mali OR Mauritania OR Mozambique OR Myanmar OR Nepal OR Niger OR Rwanda OR "Sierra Leone" OR Somalia OR Tajikistan OR Tanzania OR Togo OR Uganda OR Zimbabwe

3. Afghanistan[tw] OR Bangladesh[tw] OR Benin[tw] OR "Burkina Faso" [tw] OR Burundi [tw] OR Cambodia[tw] OR "Central African Republic" [tw] OR Chad[tw] OR Comoros[tw] OR "Democratic Republic Congo"[tw] OR Eritrea[tw] OR Ethiopia[tw] OR Gambia[tw] OR Guinea[tw] OR Haiti[tw] OR Guinea-Bisau[tw] OR Kenya[tw] OR "Korea"[tw] OR "Kyrgyz Republic" [tw] OR Liberia[tw] OR Madagascar[tw] OR Malawi[tw] OR Mali[tw] OR Mauritania[tw] OR Mozambique[tw] OR Myanmar[tw] OR Nepal[tw] OR Niger[tw] OR Rwanda[tw] OR "Sierra Leone" [tw] OR Somalia[tw] OR Tajikistan[tw] OR Tanzania[tw] OR Togo[tw] OR Uganda[tw] OR Zimbabwe[tw]

4. Albania OR Armenia OR Belize OR Bhutan OR Bolivia OR Cameroon OR "Cape Verde" OR "Republic Congo" OR "Congo Republic" OR "Côte d'Ivoire" OR "Ivory Coast" OR Djibouti OR Egypt OR "Arab Republic of Egypt" OR "El Salvador" OR Fiji OR Georgia OR Ghana OR Guatemala OR Guyana OR Honduras OR Indonesia OR India OR Iraq OR Kiribati OR Kosovo OR "Lao PDR" OR Laos OR Lesotho OR "Marshall Islands" OR Micronesia OR Moldova OR Mongolia OR Morocco OR Nicaragua OR Nigeria OR Pakistan OR "Papua New Guinea" OR Paraguay OR Philippines OR Samoa OR "São Tomé and Principe" OR ("São Tomé" AND Principe) OR Senegal OR "Solomon Islands"

OR "South Sudan" OR "Sri Lanka" OR Sudan OR Swaziland OR "Syrian Arab Republic" OR Timor-Leste OR "East Timor" OR Tonga OR Ukraine OR Uzbekistan OR Vanuatu OR Vietnam OR ("West Bank" AND Gaza) OR Gaza OR Palestine OR "West Bank" OR Yemen OR "Yemen Republic" OR "Republic of Yemen" OR Zambia

5. Albania[tw] OR Armenia[tw] OR Belize[tw] OR Bhutan[tw] OR Bolivia[tw] OR Cameroon[tw] OR "Cape Verde" [tw] OR Congo[tw] OR "Côte d'Ivoire" [tw] OR "Ivory Coast" [tw] OR Djibouti[tw] OR Egypt[tw] OR "El Salvador" [tw] OR Fiji[tw] OR Georgia[tw] OR Ghana[tw] OR Guatemala[tw] OR Guyana[tw] OR Honduras[tw] OR Indonesia[tw] OR India[tw] OR Iraq[tw] OR Kiribati[tw] OR Kosovo[tw] OR Laos[tw] OR Lesotho[tw] OR "Marshall Islands" [tw] OR Micronesia[tw] OR Moldova[tw] OR Mongolia[tw] OR Morocco[tw] OR Nicaragua[tw] OR Nigeria[tw] OR Pakistan[tw] OR "Papua New Guinea" [tw] OR Paraguay[tw] OR Philippines[tw] OR Samoa[tw] OR "São Tomé and Principe" [tw] OR ("São Tomé" [tw] AND Principe[tw]) OR Senegal[tw] OR "Solomon Islands"[tw] OR "South Sudan"[tw] OR "Sri Lanka"[tw] OR Sudan[tw] OR Swaziland[tw] OR "Syrian Arab Republic" [tw] OR Syria[tw] OR Timor-Leste[tw] OR "East Timor"[tw] OR Tonga[tw] OR Ukraine[tw] OR Uzbekistan[tw] OR Vanuatu[tw] OR Vietnam[tw] OR Gaza[tw] OR Palestine[tw] OR "West Bank" [tw] OR Yemen[tw] OR "Yemen Republic"[tw] OR "Republic of Yemen" OR Zambia[tw]

6. Angola OR Algeria OR "American Samoa" OR Antigua OR Barbuda OR (Antigua AND Barbuda) OR Argentina OR Azerbaijan OR Belarus OR Bosnia OR Herzegovina OR (Bosnia AND Herzegovina) OR Botswana OR Brazil OR Bulgaria OR Chile OR China OR Colombia OR "Costa Rica" OR Cuba OR Dominica OR "Dominican Republic" OR Ecuador OR "FYR Macedonia" OR Macedonia OR Gabon OR Grenada OR Iran OR "Islamic Republic Iran" OR Jamaica OR Jordan OR Kazakhstan OR Latvia OR Lebanon OR Libya OR Lithuania OR Macedonia OR Malaysia OR Maldives OR Mauritius OR Mexico OR Montenegro OR Namibia OR Palau OR Panama OR Peru OR Romania OR Russia OR "Russian Federation" OR Serbia OR Seychelles OR "South Africa" OR "St. Lucia" OR "St. Vincent" OR Grenadines OR ("St. Vincent" AND Grenadines) OR Suriname OR Thailand OR Tunisia OR Turkey OR Turkmenistan OR Tuvalu OR Uruguay OR Venezuela

7. Angola[tw] OR Algeria[tw] OR "American Samoa" [tw] OR Antigua[tw] OR Barbuda[tw] OR (Antigua[tw] AND Barbuda[tw]) OR Argentina[tw] OR Azerbaijan[tw] OR Belarus[tw] OR Bosnia[tw] OR Herzegovina[tw] OR (Bosnia[tw] AND Herzegovina[tw]) OR Botswana[tw] OR Brazil[tw] OR Bulgaria[tw] OR Chile[tw] OR China[tw] OR Colombia[tw] OR "Costa Rica" [tw] OR Cuba[tw] OR Dominica[tw] OR "Dominican Republic" [tw] OR Ecuador[tw] OR "FYR Macedonia"[tw] OR Macedonia[tw] OR Gabon[tw] OR Grenada[tw] OR Iran[tw] OR "Islamic Republic Iran" [tw] OR Jamaica[tw] OR Jordan[tw] OR Kazakhstan[tw] OR Latvia[tw] OR Lebanon[tw] OR Libya[tw] OR Lithuania[tw] OR Malaysia[tw] OR Maldives[tw] OR Mauritius[tw] OR Mexico[tw] OR Montenegro[tw] OR Namibia[tw] OR Palau[tw] OR Panama[tw] OR Peru[tw] OR Romania[tw] OR Russia[tw] OR "Russian Federation" [tw] OR Serbia[tw] OR Seychelles[tw] OR "South

Africa" [tw] OR "St. Lucia"[tw] OR "St. Vincent"[tw] OR Grenadines[tw] OR ("St. Vincent"[tw] AND Grenadines[tw]) OR Suriname[tw] OR Thailand[tw] OR Tunisia[tw] OR Turkey[tw] OR Turkmenistan[tw] OR Tuvalu[tw] OR Uruguay[tw] OR Venezuela[tw]

8. OR/ # 1-7
9. "community-health insurance"[All Fields] OR (("insurance, health"[MeSH Terms] OR ("insurance"[All Fields] AND "health"[All Fields]) OR "health insurance"[All Fields] OR ("health"[All Fields] AND "insurance"[All Fields])) AND ("residence characteristics"[MeSH Terms] OR ("residence"[All Fields] AND "characteristics"[All Fields]) OR "residence characteristics"[All Fields] OR "community"[All Fields])) OR ("community"[All Fields] AND "health"[All Fields]) OR "community health"[All Fields]))
10. "voluntary health insurance"[all fields] OR ("voluntary"[All Fields]) OR ("voluntary"[All Fields] AND "health"[All Fields]) OR "voluntary health"[All Fields]))) AND ((("insurance, health"[MeSH Terms] OR ("insurance"[All Fields] AND "health"[All Fields]) OR "health insurance"[All Fields] OR ("health"[All Fields] AND "insurance"[All Fields])))
11. ("insurance, health"[MeSH Terms] OR ("insurance"[All Fields] AND "health"[All Fields]) OR "health insurance"[All Fields] OR ("health"[All Fields] AND "insurance"[All Fields] AND "group"[All Fields])) OR ("insurance, health"[MeSH Terms] OR ("insurance"[All Fields] AND "health"[All Fields]) OR "health insurance"[All Fields] OR ("insurance"[All Fields] AND "group"[All Fields] AND "health"[All Fields])) OR "Group Health Insurance"[All Fields]
12. ("insurance, health"[MeSH Terms] OR ("insurance"[All Fields] AND "health"[All Fields]) OR "health insurance"[All Fields] OR ("health"[All Fields] AND "insurance"[All Fields] AND "micro"[All Fields])) OR ("insurance, health"[MeSH Terms] OR ("insurance"[All Fields] AND "health"[All Fields]) OR "health insurance"[All Fields] OR ("insurance"[All Fields] AND "micro"[All Fields] AND "health"[All Fields])) OR "micro Health Insurance"[All Fields]
13. ("Insurance, Health/economics"[Majr:NoExp] OR "Insurance, Health/methods"[Majr:NoExp] OR "Insurance, Health/organization and administration"[Majr:NoExp])
14. OR/ # 9-13
15. (("Risk Sharing, Financial"[Mesh]) OR "Risk Reduction Behavior"[Mesh]) OR "Health Status Indicators"[Mesh]
16. Social capital [tw] OR knowledge [tw] OR "trust"[Mesh Terms] OR "client satisfaction"[tw] OR "Patient Satisfaction"[Mesh] OR "Consumer Satisfaction"[Mesh]
17. "Primary Health Care/economics"[Majr:noexp] OR "Primary Health Care/utilization"[Majr:noexp]
18. "Health Services" [MeSH] OR ("Outcome and Process Assessment (Health Care)/economics"[Mesh] OR "Outcome and Process Assessment (Health Care)/organization and administration"[Mesh] OR "Outcome and Process Assessment (Health Care)/utilization"[Mesh]) OR ("Health Services Needs and Demand/economics"[Mesh] OR "Health Services Needs and Demand/statistics and numerical data"[Mesh] OR "Health Services Needs and Demand/utilization"[Mesh]) OR ("Health Care Reform/economics"[Mesh] OR

"Health Care Reform/organization and administration"[Mesh] OR "Health Care Reform/utilization"[Mesh]) OR ("Health Services Accessibility/economics"[Mesh] OR "Health Services Accessibility/statistics and numerical data"[Mesh] OR "Health Services Accessibility/utilization"[Mesh]) OR (("Delivery of Health Care/methods"[Majr:noexp] OR "Delivery of Health Care/organization and administration"[Majr:noexp] OR "Delivery of Health Care/utilization"[Majr:noexp]))

19. (performance[tw] OR coverage[tw] OR utilization[tw] OR "patient satisfaction"[tw] OR "Patients treated" [tw] OR "Health Services Accessibility"[tw] OR ("health services" AND accessibility) OR "Comprehensive Health Care"[tw] (Comprehensive AND "Health care")[tw]

20. health care cost[tiab] OR Fees and Charges [Mesh] OR Health Expenditures [Mesh] OR Insurance, Health [Mesh] OR Catastrophic expenses [tw] OR Out of pocket payment [tw]OR Health expenditures [Mesh]

21. OR/# 15-20

22. ((access[tw] OR accessible[tw] OR accessibility[tw])) AND (equity[tw] OR inequity[tw] OR coverage[tw] OR utilization[tw] OR utilizing[tw] OR utilization[tw] (utilizing[tw] AND utilization[tw]) OR "Health Services Accessibility"[tw])

23. # 8 AND # 14 AND # 21 AND # 22

24. (Animals [mh] NOT (humans[mh] AND animals[mh]))

25. # 23 NOT # 24

Appendix 2.2: Inclusion and exclusion criteria

Type of studies

We will include a wide range of research methodologies to include quantitative and qualitative work (RCT, experimental designs with control groups, surveys, interviews, case-studies etc.). Observational studies such as surveys, cohort studies, case-controlled studies and case studies (with or without economic or equity analyses) will be considered potentially suitable. While we do not expect to find many, randomised and non-randomised trails, where treatment groups are compared to a suitably selected counterfactual (control groups), with well identified methods of comparison pre-post, simple difference, d-in-d, other quasi experimental methods and randomised experiments, and interrupted time series will also be considered potentially suitable for inclusion, as would be systematic and non-systematic reviews. Publications describing and/or analysing theoretical frameworks will also be reviewed to contribute to the goals of the study, but opinion pieces and policy documents will be excluded. The research questions would be answered using broad evidence (including quantitative and qualitative).
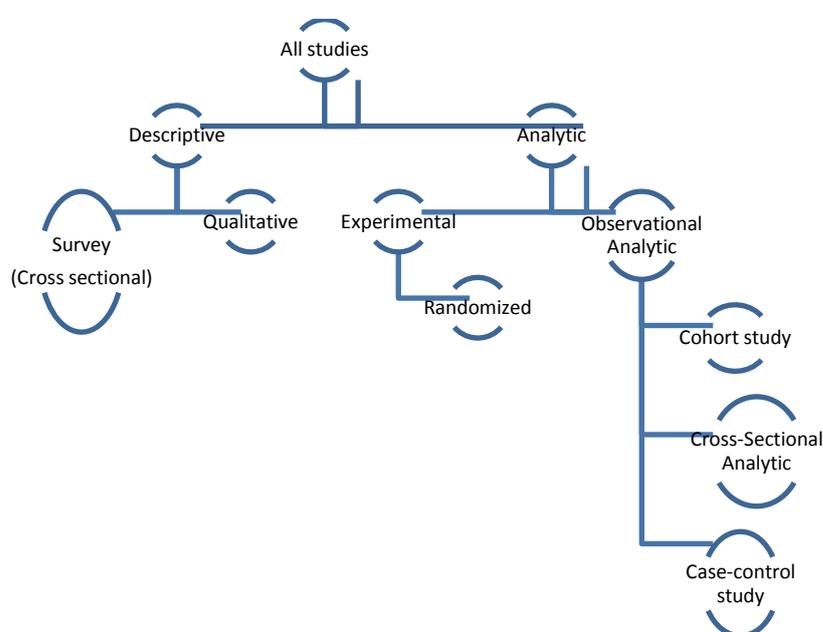
Exclusion criteria: Studies will be excluded if

1. Study is published before 1990
2. Study is a policy analysis, or opinion piece
3. Study is not in a low or middle income country
4. Study is on other health insurance mechanisms (private and social)

Types of participants

Members who voluntarily choose to affiliate and pay a premium of the CBHI schemes will be included, as well as those individuals offered to join such schemes and decline to do so. CBHI participants will be included if they take place in low and middle income countries (World Bank, 2011). All type of studies that have been taken place in low and middle income countries (LMIC) as defined by the World Bank (2011) will be included in this review, but will be sorted according the type of addressed research questions. Following the World Bank's main criterion for

classifying countries, i.e. gross national income (GNI) per capita, we will consider all countries that are classified as low or middle income.

Types of interventions

Interventions will only be considered for inclusion in this review if they are voluntary, contributory and community-based, and in low and middle income countries.

"Voluntary" in our context means an informed and independent choice of the members to enrol (or not); and "contributory" means that all members pay an insurance premium. The review excludes mandatory insurance affiliation, regardless whether the obligation originates from a different transaction (e.g. an insurance policy added onto a microcredit loan, or compulsory payments that may apply either to individuals linked to group participation).

Type of health insurance

Most health insurance schemes can be classified into three broad categories, social health insurance, private health insurance and community health insurance. In India, we have a fourth category called government initiated health insurance schemes that do not fit into any of the above three categories.

1. Social health insurance- Social health insurance schemes are statutory programmes financed mainly through wage-based contributions and related to level of income. SHI schemes are mandatory for defined categories of workers and their employers. It is based on a combination of insurance and solidarity. The classical example of an SHI is the German or Belgian health insurance system. Here, employees and employers contribute to a 'mutual fund(s)' that is then used to finance the healthcare for the entire population. Citizens have to enrol compulsorily in one of these mutual funds. The government also provides significant funding to cover those who are not able to contribute. In many low-income countries, SHI has been implemented mainly for the civil servants and the formal sector.

2. Private health insurance- Private health insurance refers to insurance schemes that are financed through individual private health premiums, which are often voluntary, and risk rated. 'For-profit' insurance companies manage the funds. In low-income countries like India, they provide primary insurance cover, i.e. they insure hospitalisations. On the other hand, in high-income countries, they usually provide supplementary secondary insurance cover. In Belgium, private health insurance is used to cover services not provided by the SHI, e.g. a private room, or dental services. In the USA and in some countries in Latin America, the private health insurance is the main actor in financing healthcare. Being a voluntary health insurance, it has the potential for adverse selection. People who have a pre-existing illness may enrol in larger numbers, thus endangering the financial viability. Most PHIs use risk-rated premiums as a measure to overcome this.

3. Community health insurance is "any not-for-profit insurance scheme aimed primarily at the informal sector and formed on the basis of a collective pooling of health risks, and in which the members participate in its management". The important point to note is that in CHI, the local community takes the initiative in establishing a health insurance scheme, usually to improve access to healthcare as well as protect against high medical expenses. The solidarity element is strongest in CHIs as most of the members know each other. Community health insurance as a movement is

quite active in sub-Saharan Africa. Even in Asia, we have examples from India, the Philippines, Indonesia, Cambodia, Bangladesh, etc.

CHI has been classified by ownership, management, membership, and risk coverage.

- Classification by ownership refers to the initiator of a CHI scheme rather than to restrict legal ownership. Essentially, such a scheme can be initiated and run by group of people with similar health-care needs (community-based) or by a health-care provider (provider-driven). By extension, a community-based scheme can also be owned by representative organizations within a community, for example, a nongovernmental organization (NGO) or a trade union. Provider-driven schemes can further be categorised according to the character of the provider. Common examples include faith-based providers wishing to improve access to their health-care facilities, other private providers wanting to improve income flow, or governmental institutions attempting to implement CHI at the district level.

- Classification by management differentiates between schemes on the basis of organization and control and is thus somewhat more specific. A CHI scheme can either be managed by elected representatives of the membership, by an NGO with existing connections to the scheme, or by a health-care provider, or the management may be contracted out to a third party such as a professional insurer.

- Classification by membership can provide useful additional information. Membership of a CHI scheme may be defined on a geographical basis (for example, people living in the same village or district, or using the same health facility), on the grounds of occupation, ethnicity, religion or gender, or on membership in another organization.

- Classification by risk coverage distinguishes between CHI schemes covering infrequent but costly events (such as hospital admissions) and those covering common low-cost events (e.g. first-line consultations). Such a distinction assumes a direct relation between high-cost events and high risk, whereas others have reported that frequent low-cost events can also lead to catastrophic health expenditure (Segall et al 2000). In addition, classification by risk coverage is becoming obsolete since more and more CHI schemes set out to cover both high-cost and low-cost events, and in some cases- even indirect costs.

4. Government-sponsored health insurance schemes (GSHIS)[6]- As stated earlier, India has a fourth category that is not usually seen in other countries. This is the 'GSHIS'. The specificity of this is that the government introduces a health insurance programme, usually for the poorest and vulnerable sections of the community. In many of the schemes, the premium is totally subsidised by the government (from tax-based revenues) and is paid directly to the insurance company. Rarely, the community may be expected to pay a token amount. The insurance company or an independent body is the organiser of the scheme. These schemes last for a couple of years, depending on the political will and longevity of the

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[6] In India, a new generation of government sponsored health insurance schemes (GSHIS) has emerged to provide poor with financial coverage through mobilization of government resources (Forgia & Nagpal, 2012).

government. These are seen more as populist welfare schemes rather than a long-lasting intervention.

Although comparisons may not always be feasible, this review will include comparisons between those individuals who join CBHI programmes and those that do not.

Appendix 2.3: Framework Domains

1. Demand side factors
a) Household characteristics
   - Household income
   - Household size
   - Health expenses
   - Health events
   - Women below age 40
   - Number of children and aged

b) Individual characteristics
   - Risk perspective
   - Understanding of the insurance product

c) Social capital
   - Trust in insurance scheme provider/scheme management
   - Broad image of the intermediary (NGO provider, MFI etc.) in the community

2. Supply-side factors
a) Scheme-related factors
   - Benefit package design
   - Premiums
   - Procedure for claim settlement
   - Quality of service delivery (provider-model)

b) Institutional factors
   - Regulatory mechanism
   - Aspects relevant for setting up a local, self-run health insurance plan (insurance education and technical assistance in insurance domain knowledge)

c) Other supply-side factors
   - Availability of health care facilities
   - Quality of care

Additional considerations

Within each domain, the following dimensions will be considered:

    d) Equity

        (i) Poverty

        (ii) Geography

        (iii) Gender

    e) Level of intervention/action

          (i) Local

          (ii) Regional

          (iii) National

          (iv) International

Appendix 2.4: The Payback Framework

SR steps	Policy responses	Suggestions/Comments	Changes made
Preparing the protocol	NA	NA	NA
Peer Review of protocol	Out of three policymakers, we received comments from Michael Kent Ranson	Abstract should be restructured	All comments are documented and incorporated while revising the protocol.
		Purpose of the study is not clear	
		Do we also consider factors affecting re-enrolment in the scheme?	
		Type of Intervention needs to be explained	
		Type of Outcome measures	
		Quality assessment tool	
		Inclusion and Exclusion criteria for including studies is not clear	
		Draft a theory of change	
Disseminating draft report			
Revising report			
Dissemination			

Source: Adapted from Hanney, 2005

Appendix 2.5: Journals to be handsearched

FORTE Insurance Journal

Health Action

Insurance Regulatory and Development Authority (IRDA) Journal

IZA Journal of Labour Economics

Journal of Economic Perspectives

Journal of Insurance and Risk Management

Viewpoint

World Bank Review

Appendix 2.6: EPPI-Centre Keyword sheet including review-specific keywords

		Remarks
1. Identification of report	Online database (please specify)	If the report was found through searching on electronic bibliographic database. In addition, If the report was found on one or more electronic database, the following keywords would indicate which database it was found on; 1. EconLit, Economic Evaluation Database (EED), EconBase (Elsevier), Business Source Premier (EBSCO), Cochrane Library 2. **MEDLINE/PUBMED or OVID, EMBASE/OVID,** Sociological Abstracts, Health Management Information Consortium (HMIC), Eldis, ISI web of Knowledge [(including Science Citation Index Expanded (SCI-Expanded, Social Science Citation Index (SSCI), JOLIS, LILACS, Conference Proceedings Citation Index (CPCI_S), Conference Proceedings Citation Index – Social Science & Humanities (CPCI_SSH)] and POPLINE. 3. Google and Google scholar 4. Global health (EBSCO), IDEAS (http://ideas.repec.org/) 5. ProQuest, PROSPERO, CRD, University of York 6. Scopus, SSRN, ScienceDirect (Elsevier), Cambridge University Press, Kluwer on-line, Synergy (Blackwell), ingenta, InterScience (Wiley), Scirus 7. Database of Abstracts of Reviews of Effectiveness (DARE), The EPPI-Centre database including BiblioMap,

		TRoPHI (Trails Register of Promoting Health Interventions), 3iE databases
	Handsearch	If the report was found through handsearching a journal
	Citation	If the report was identified from the bibliographic list of another report
	Contact	If the report was found through a personal/professional contact
	Unknown	If it is unknown how the report was found
2. Status	Published	If the report has an ISBN or ISSN number
	In press	If the report has been accepted for publication but has not yet been published
	Unpublished	If the report do not have an ISBN or ISSN number
3. Linked reports (If this report is linked to one or more other reports in such a way that they also report the same study?)	Not linked	
	Linked	Please provide bibliographic details and/or unique identifier
4. Language	English	
5. In which country or countries the study was carried out?	LMIC	The country where the study was carried out as a keyword. If the country was conducted in more than one country then all the countries will be included.
6. What is/are the topic focus/foci of the study?	Voluntary uptake of insurance in low and middle income countries	
	Time and	• Before 1990

		language of the report	• After 1990
		Study type and study design	• RCTs • Cohort studies • Case-control • Cross-sectional studies • Case series, case reports • Ideas, opinions, editorials, anecdotal
		Type of participants	• Members voluntarily chose to join the scheme (Yes or No) • Members voluntarily chose not to join the scheme (Yes or No) • Members chose to affiliate/re-affiliate
		Type of interventions	• Voluntary or mandatory • Community participation (Yes or No)
		Heterogeneity: Are the following sub-group effect considered? (Yes/No/Unclear)	• Age Group • Women • Socio-economic status • Geographically remote areas • Other
		Type of enabling and limiting factors	• Household characteristics such as household income, household size, health expenses, health events, women below age 40, number of children and aged; and Individual characteristics risk perspective, understanding of the insurance product etc. • Social capital such as trust in insurance scheme provider/scheme management, broad image of the intermediary (NGO provider, MFI, etc.) in the community • Scheme-related factors such as benefit package design, premiums, procedure for claim settlement, Quality of service delivery (Provider-model) • Institutional factors such as regulatory mechanism, aspects

	50	relevant for setting up a local, self-run health insurance plan (insurance education and technical assistance in insurance domain knowledge) • Supply side factors such as availability of health care facilities, Quality of care

Appendix 2.7: Critical appraisal of quantitative and qualitative studies

Our research will focus only on voluntary and community-based health insurance programmes in low and middle income countries. The quality of the included studies will be assessed as follows:

1. Is the research aim clearly stated? (Yes/No)

REPORTING:

2. Description of the context? (Yes/No)
3. Description of the sampling procedures? (Yes/No)
   - How have the participants been selected, were they the most appropriate?
4. Are sample characteristics sufficiently reported? (sample size, location, and at least one additional characteristic) (Yes/No)
5. Is it clear how the data were collected (eg: for interviews, is there an indication of how interviews were conducted? (Yes/No)
6. Methods of recording of data reported? (Yes/No)
7. Methods of analysis explicitly stated? (Yes/No)

METHODOLOGY:

8. Is there a clear link to relevant literature/theoretical framework? (Yes/No)
9. Is the design appropriate to answer the research question? (Yes/No)
   - Has the researcher justified the research design?
10. Was the sampling strategy appropriate to the aims of the research? (Yes/No)
    - Have the researchers explained how the participants were selected?
    - Have the researchers explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study?
    - Have the researchers discussed issues around recruitment? (e.g. why some people chose not to take part)
11. Were the data collected in a way that addressed the research issue? (Yes/No)
    - Were the methods used appropriate and justified?
    - Did the researcher discuss saturation of data?
12. Was the data analysis sufficiently rigorous? (Yes/No)
    - Is there a detailed description of the analysis process?
    - Does the data support the findings?
    - Is the relationship between the researcher and the participants adequately considered?

- To what extent is contradictory data are taken into account?

- If the findings are based on quantitative analysis of survey data, are multivariate techniques used to control for potential confounding variables?

13. Has triangulation been applied? (Yes/No)

- Data triangulation (location, time and participants)

- Investigator triangulation

- Theory triangulation (several theories)

- Methodological triangulation

14. Is the analysis and conclusions clearly presented? (Yes/No)

- Have the researchers discussed the credibility of their findings? (e.g. triangulation, respondent validation, more than one analyst)

- Is there adequate discussion of the evidence both for and against the researcher's arguments?

- Are the findings explicit?

- Are the findings discussed in relation to the original research question?

15. Was there potential for conflict of interest and if so, was this considered and addressed? (Yes/No)

16. Does the paper discuss ethical considerations related to the research? (Yes/No)

Source: Waddington et al., 2012

Appendix 2.8: Equity checklist for systematic review authors

1. Develop a logic model

Eq-1.   Is there potential for differences in relative effects between advantaged and disadvantaged populations? E.g. Are poor populations less likely to enrol in CBHI scheme?   □Yes   No

Eq-2.   Did you develop a logic model to illustrate the hypothesized mechanism of action (that is, how the intervention is expected to work)?   Yes   No

2. Define disadvantage and for whom interventions are intended

Eq-3.   Were interventions aimed at the disadvantaged, defined across PROGRESS-Plus categories?   E.g. CBHI schemes able to enrol families/individuals with low socio-economic status (income, education) and gender (female).   Yes   No

Eq-4. Did the inclusion/exclusion criteria and data extraction use structured methods to assess categories of disadvantage (e.g. socioeconomic status, sex, race/ethnicity, etc.)?   Yes   No

Eq-5. Did you appropriately describe socio-demographic characteristics (e.g. socioeconomic status, sex, race, etc.), given the details in the included studies?   Yes   No

Eq-6. Did you describe the socio-demographic characteristics of withdrawals and dropouts? (E.g. Families/individuals that did not enrol or renew).   Yes   No

3. Decide on the appropriate study design(s)

Eq-7. Were your selection criteria for study designs fit for purpose given the focus on equity? (E.g. Secondary outcomes, equitable access for health insurance).   Yes   No

Eq-8.   Did your included study designs include the contextual information relevant for the category/categories of disadvantage under consideration?   Yes   No

Eq-9.   Was the rationale for the choice of included study designs clearly stated/justified?   Yes   No

4. Identify the appropriate outcome(s)

Eq-10. Did you include relevant and important outcomes for the appropriate PROGRESS-Plus groups (i.e. considered in the logic model, etc.)?   Yes   No

5. Evaluate processes and understand context

Eq-11.   Did you conduct a process evaluation that considers the disadvantaged?   Yes   No

6. Analyse and present the data

Eq-12. Did you conduct subgroup analyses across categories of disadvantage (e.g. socioeconomic status, sex, race, etc.) where appropriate?   Yes   No

Eq-13. If subgroups were analysed, did you interpret the results appropriately, given statistical power?	Yes	No

7. Discuss applicability of findings

Eq-14. Have you discussed the implications of differences in absolute or relative effects in your category of disadvantage?	Yes	No
Eq-15. Have you considered the inclusion/exclusion criteria of the primary studies, and how that affects generalizability?	Yes	No
Eq-16. Did your search include databases, terms, and concepts relevant for the category of disadvantage under consideration?	Yes	No

Source: Kavanagh et al., 2008

Appendix 2.9: Matrix of synthesis results

Author (ref) Country (scheme) Study year Type of study	a) Methodology b) Data c) Study type	Survey (Individuals , Households)	Take up factor	Effect direction	Other findings	Score*

*Using Quality assessment tool (Appendix 2.6)

Appendix 2.10: Review Assessment Form

Reviewer's Name: _____

S= Satisfactory; no changes needed.

N=Needs minor improvement.

U=Unsatisfactory; needs major improvement.

Task	Comments
Importance of the topic area	
1a: Is the review question clear and well justified in the background? S: _____ N: _____ U: _____	
1b. Is the review question important for policy or practice? S: _____ N: _____ U: _____	
1c. Is the review question pertinent to current debates in this area? S: _____ N: _____ U: _____	
1d. Have the team sufficiently understood / explained the key concepts in this area? S: _____ N: _____ U: _____	
Perspectives of potential users of the research	
Does the review describe how the team will ensure that the perspectives of all the different categories of users of the research will be adequately taken into account?	
Methods	
3a. Is the search strategy adequate?	

S: _____ N: _____ U: _____	
3b. Is the proposed quality appraisal method adequate? S: _____ N: _____ U: _____	
3c. Is the proposed synthesis method appropriate? S: _____ N: _____ U: _____	

Summary score for reviews

If possible we would like you to give this protocol on overall score

Score _____

Score	Description of application	Justification
5	Excellent	Acceptable for publication on by the EPPI-Centre in its present form
4	Good	Acceptable for publication by the EPPI-Centre with minor revisions
3	Good potential	There is much merit in this report, but it could only be published by the EPPI-Centre after resubmission, perhaps with additional external support.
2	Some merits	There are significant weaknesses in this systematic review, but these could, in principle, be addressed.
1	Poor	Weak systematic review

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