Preker, AS; Carrin, G; Dror, D; Jakab, M; Hsiao, W; Arhin-Tenkorang, D; (2002) Effectiveness of community health financing in meeting the cost of illness. Bulletin of the World Health Organization, 80 (2). pp. 143-50. ISSN 0042-9686 https://researchonline.lshtm.ac.uk/id/eprint/17963

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Effectiveness of community health financing in meeting the cost of illness*
Alexander S. Preker,1 Guy Carrin,2 David Dror,3 Melitta Jakab,4 William Hsiao,5 & Dyna Arhin-Tenkorang6

Abstract How to finance and provide health care for the more than 1.3 billion rural poor and informal sector workers in low- and middle-income countries is one of the greatest challenges facing the international development community. This article presents the main findings from an extensive survey of the literature of community financing arrangements, and selected experiences from the Asia and Africa regions. Most community financing schemes have evolved in the context of severe economic constraints, political instability, and lack of good governance. Micro-level household data analysis indicates that community financing improves access by rural and informal sector workers to needed health care and provides them with some financial protection against the cost of illness. Macro-level cross-country analysis gives empirical support to the hypothesis that risk-sharing in health financing matters in terms of its impact on both the level and distribution of health, financial fairness and responsiveness indicators.

The background research done for this article points to five key policies available to governments to improve the effectiveness and sustainability of existing community financing schemes. This includes: (a) increased and well-targeted subsidies to pay for the premiums of low-income populations; (b) insurance to protect against expenditure fluctuations and re-insurance to enlarge the effective size of small risk pools; (c) effective prevention and case management techniques to limit expenditure fluctuations; (d) technical support to strengthen the management capacity of local schemes; and (e) establishment and strengthening of links with the formal financing and provider networks.

Keywords Community health services/economics; Financing, Health; Consumer participation/economics; Households; Cost of illness; Developing countries; Multicenter studies (source: MeSH, NLM).

Mots clés Service public santé/econome; Financement, Santé; Participation consommateurs/economie; Coût maladie; Ménages; Pays en développement; Étude multicentrique (source: MeSH, INSERM).

Palabras clave Servicios de salud comunitaria/economıa; Financiamiento de la salud; Participación comunitaria/economıa; costo de las enfermedades; Hogares; Paı ´ses en desarrollo; Estudios multicentrisicos (fuente: DeCS, BIREME).


Introduction
One of the world’s most urgent problems is financing and providing health care for the 1.3 billion poor people who live in low- and middle-income countries. Many poor people lack access to effective and affordable drugs and to surgery and other interventions, largely because of weaknesses in the financing and delivery of health care (1–3). Although 93% of the global burden of disease falls on 84% of the world’s poor, only 11% of global health spending (US$ 2800 billion) occurs in low- and middle-income countries.

For years, many low- and middle-income countries have tried to leapfrog the developmental process needed to expand risk protection to universal coverage. The preferred mechanism for this has been to design and implement traditional public financing instruments, such as general revenues and social insurance. Few have succeeded in this approach. Estimates of the expenditure gap to achieving universal access to health services at low income levels through such public financing mechanisms range from US$ 25–50 billion (4) to over US$ 100 billion (5). In this context, community financing, notwithstanding its shortcomings, is often the only viable option for providing some financial protection and access to basic health services for the poor (6).

This paper summarizes the results of a large-scale collaborative study that aimed at assessing the impact, strengths and weaknesses of community involvement in financial protection against the cost of illness and at improving access to health care for poor rural populations and workers in the informal sector (7). It explores potential policies for tackling managerial, organizational and institutional weak-

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Ref. No. 01-1570

Voir page 149 le résumé en français. En la página 149 figura un resumen en español.
necessities in community financing, rather than trying to replace them with direct government intervention, which has often proved unsuccessful.

Differences between rich and poor in financial protection against cost of illness

A combination of general taxation, social insurance, private health insurance and limited out-of-pocket user charges has become the preferred instrument for health financing in middle- and higher-income countries (8). In these contexts, large segments of the population work in urban settings and in formal employment. It is relatively easy to tax such workers at source and to design health care systems that are financed by government or payroll taxes.

The policy options for financing health care at low income levels are, however, more restricted. Low-income countries often have large populations in the rural and informal sectors, which limits the effective taxation capacity of their governments. In middle-income and upper-income countries, large segments of the population work in urban settings and in the formal employment sectors, and it is relatively easy to tax workers at source and design health care systems financed by government or payroll taxes. In most low-income countries the formal urban employment sector is small relative to the populations in rural areas and in informal employment. In these countries, such populations often have no effective collective arrangements whereby they can pay for health care or obtain protection from the cost of illness (9–12).

A related set of problems occurs during the pooling stage of health financing. Pooling requires some transfer of resources from rich to poor, from healthy people to sick people, and from the gainfully employed to the economically inactive. Without such pooling, people on low incomes are exposed to serious financial hardship when they fall ill. Where pooling exists it is often fragmented along income groups, preventing effective cross-subsidies between the higher and lower income groups. Cross-subsidies may also be prevented when fragmentation is based on professional categories, e.g. there may be separate pools for workers and farmers in the same region. Many households become destitute when faced with severe illness that leads to admission to hospital (13). The proportion of the population covered by risk-sharing arrangements is comparatively low at low income levels (Fig. 1).

Faced with overwhelming demand and very limited resources, many governments find it difficult to ration health care so that public expenditure is targeted on the poor. In many low-income countries the rich often benefit more than the poor from public subsidies and public expenditure (14). Public policies that, in theory, offer health care to the whole population may unwittingly shunt scarce health care resources away from the poor and towards segments of the population with more political influence over the health care system (15).

Role of communities

Discouraged by the inability of governments to reach rural populations and people engaged in the informal sector, communities have increasingly been mobilizing themselves to secure financial protection against the cost of illness for excluded population groups (16–20). A range of health financing instruments has emerged over the past decade, including microinsurance, community health funds, mutual health organizations, rural health insurance, revolving drugs funds, and community involvement in user-fee management. Their common feature is the active involvement of the community in revenue collection, pooling, resource allocation and, frequently, service provision.

Three relatively recent contributions from development practice and thinking have provided inspiration for community financing initiatives (Table 1) (27): microfinance instruments, i.e. microcredits, microsavings, microinsurance and financial intermediation, have succeeded in reaching the poor where traditional poverty alleviation instruments have failed; there has been an increasing awareness of the links between social capital, i.e. community, network, institutional and societal links, and a range of development outcomes; there is now evidence from mainstream theories on welfare economics, public finance, health economics and public health as to the impact of traditional instruments on poverty alleviation.

Links to microfinance organizations

The role of microfinance in poverty alleviation for low-income groups has received considerable attention in recent years (22–25). Until recently, few financial and risk-protection mechanisms were accessible to the poor. It was assumed that people living on less than US$ 1 a day were neither willing nor able to save or to contribute to insurance against the risks they faced. The poor were described as unbankable and uninsurable (24). The following microfinance instruments have been developed with a view to improving the financial stability and productivity of low-income households: microcredits that help to improve immediate human, physical and social capital, e.g. small short-term loans that help to pay for training, farm equipment or access to social networks; savings for building up medium-term capital, such as education, down payments on land, and dowries for the marriage of daughters into good families; insurance to meet unpredictable expenses (such as theft, loss and illness); and financial intermediation, i.e. payment systems that facilitate trade and investment.

Although most progress has been made in microcredits and microsavings, the extension of risk management techniques from other sectors to the health sector is now happening...
in many microfinance and development organizations in low-income countries. This is especially true in the case of microinsurance (23, 26). Reinsurance has been considered as a means of tackling some of the inherent problems of the smaller size of the risk pool associated with these schemes (27).

**Links to social capital at community level**

When hard times strike, family and friends are often the ultimate safety net for low-income groups. Social capital can be conceptualized in the following dimensions, which have the potential for both positive and negative impacts on development: community links, such as extended families, local organizations, clubs, associations and civic groups, i.e. people in small communities, helping each other; network links between similar communities (horizontal) and between different communities (vertical), such as ethnic groups, religious groups, class structures, the sexes, and so on; institutional links, for instance through the political, legal and cultural environments of communities; and societal links between governments and their citizens through complementarity and embeddedness, e.g. public–private partnerships and the legal framework that protects the rights of association (such as chambers of commerce and business groups), and community participation in public organizations (e.g. community members on city councils and hospital boards).

But such social capital has both benefits and costs. A disadvantage arises when communities and networks become isolated, parochial, or at cross-purposes with society’s collective interests, such as ghettos, gangs or cartels. Intercommunity ties or bridges are needed to overcome the tendency of communities and networks to pursue narrow sectarian interests. Some of these shortcomings can affect community financing schemes.

- Schemes that share risk only among the poor deprive their members of much-needed cross-subsidies from higher income groups.
- Schemes that remain isolated and small deprive their members of the benefits of spreading risks across a broader population.
- Schemes that are disconnected from the broader referral system and health networks deprive their members of the more comprehensive range of care available through the formal health care system.

**Links to mainstream public economics**

In addition to their links to microfinance and social capital, community-financing schemes benefit from their connections with the overall welfare of the society in which they operate, with the system of public financing, no matter how weak it may be, and with the broader social policy underpinning the prevailing national health system. Schemes that build such connections at an early stage are better able to evolve in terms of expanding the number of members covered, the level of resources mobilized, the size of the risk pool, and the range of benefits they can offer. Their members have more to gain through such connectivity than they would through isolation.

Proponents of stronger links between community involvement and public finance argue their case on both philosophical and technical grounds. There have been many examples of failure to secure objectives of efficiency (28–32) and equity (33, 34) by the private sector and market forces acting alone.

**Assessment of impact, strengths and weaknesses**

Past reviews of community financing have been largely descriptive, using macro-level country data. Only recently have authors begun to consider the impact of community-based financing mechanisms at the household level (35). We have used a combination of these techniques. The following levels of analysis were included in order to assess the impact,
strengths, and weaknesses of community involvement in financial protection against the cost of illness and in health improvement (Table 2): a survey of the literature on the impact, strengths and weakness of different types of community involvement in health financing (20); regional reviews of Asian and African experiences of community involvement in health care financing (36, 37); micro-level analysis of household data concerning the specific impact of community financing schemes on the overall welfare of the poor (financial protection and access to health services for the poor) (35); and macro-level cross-country analysis of the impact of different health care financing on performance indicators in national health systems (health, financial fairness, responsiveness) (38).

Discussion

“Community financing” has become a generic expression covering a large variety of health financing arrangements (26, 39–41). Different authors use the term in different ways (16, 17, 36, 42). Microinsurance, community health funds, mutual health organizations, rural health insurance, revolving drugs funds, and community involvement in user-fee management have all been referred to as community-based financing. Our review covered the entire range of health financing instruments where the community was involved in securing financial protection against the cost of illness and in providing access to priority health services.

Literature survey

We conducted a literature survey based on 45 published and unpublished reports and conference proceedings completed after 1990. The aim was to synthesize the impact of community financing as reported by others in the following three dimensions.

- How successful are community financing schemes in mobilizing resources for health care?
- How successful are they in providing financial protection for their members against the costs of illness?
- How successful are they in including the poor?

Resource mobilization

The literature provides good evidence that community financing arrangements make a positive contribution to the financing of health care at low income levels. In doing so, such

<table>
<thead>
<tr>
<th>Table 2: Core characteristics of community-based financing schemes</th>
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<td><strong>Technical design characteristics</strong></td>
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<td>• Revenue collection mechanisms</td>
</tr>
<tr>
<td>- Level of prepayment compared with direct out-of-pocket spending</td>
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<tr>
<td>- Extent to which contributions are compulsory as opposed to voluntary</td>
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<tr>
<td>- Degree to which contributions are progressive</td>
</tr>
<tr>
<td>- Subsidies for the poor and buffering against external shocks</td>
</tr>
<tr>
<td>• Arrangements for pooling revenues and sharing risks</td>
</tr>
<tr>
<td>- Size</td>
</tr>
<tr>
<td>- Number</td>
</tr>
<tr>
<td>- Redistribution from rich to poor, healthy to sick, and gainfully employed to economically inactive</td>
</tr>
<tr>
<td>• Purchasing and resource allocation</td>
</tr>
<tr>
<td>- Demand (for whom to buy?)</td>
</tr>
<tr>
<td>- Supply (what to buy, in which form, and what to exclude?)</td>
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<tr>
<td>- Prices and incentive regime (at what price and how to pay?)</td>
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<tr>
<td><strong>Management characteristics</strong></td>
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<tr>
<td>• Staff</td>
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<tr>
<td>- Leadership</td>
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<td>- Capacity (management skills)</td>
</tr>
<tr>
<td><strong>Culture</strong></td>
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<tr>
<td>- Management style (top-down or consensual?)</td>
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<tr>
<td>- Structure (flat or hierarchical?)</td>
</tr>
<tr>
<td><strong>Access to information</strong></td>
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<tr>
<td>- Financial, resources, health information, behaviour</td>
</tr>
<tr>
<td><strong>Organizational characteristics</strong></td>
</tr>
<tr>
<td>• Organizational forms (extent of economies of scale and scope, and contractual relationships?)</td>
</tr>
<tr>
<td>• Incentive regime (extent of decision rights, market exposure, financial responsibility, accountability, and coverage of social functions?)</td>
</tr>
<tr>
<td>• Linkages (extent of horizontal and vertical integration or fragmentation?)</td>
</tr>
<tr>
<td><strong>Institutional characteristics</strong></td>
</tr>
<tr>
<td>• Stewardship (who controls strategic and operational decisions, regulations?)</td>
</tr>
<tr>
<td>• Governance (what are the ownership arrangements?)</td>
</tr>
<tr>
<td>• Insurance markets (rules on revenue collection, pooling, and transfer of funds?)</td>
</tr>
<tr>
<td>• Factor and product markets (from whom to buy, at what price, and how much?)</td>
</tr>
</tbody>
</table>

Outcome Indicators

- Health
- Protection against impoverishment
- Social inclusion
arrangements improve people’s access to drugs, primary care, and even to more advanced hospital care (43). This community involvement allows rural and low-income populations to raise more resources with which to pay for health care than would otherwise have been possible (41, 44, 45). But there are great variations in the ability of various schemes to raise the money needed to pay for their benefit packages. The principal constraint is the low income of the contributing population (16, 17, 36, 46, Fig. 2). This is particularly true when most of the members of the community schemes are already below the poverty line.

**Financial protection**

Where household survey data have been analysed, researchers have consistently found community-based health financing to be effective in reaching low-income populations that would not otherwise have financial protection against the cost of illness (47). Improved financial protection was achieved through reducing scheme members’ out-of-pocket spending, while increasing their use of health care services (42, 46, 48, 49). At the same time, some research suggested that the poorest of the poor and socially excluded groups were often not included in community-based initiatives for the financing of health care (46, 47, 50). Those studies that compared the level of financial protection of scheme members with that of non-members found that belonging to some form of prepayment scheme provided additional support for the above conclusions, and demonstrate the diversity of community financing arrangements in these regions. Many of these arrangements appeared to improve financial protection against the cost of illness, to allow better access of poor households to essential health care, and to confer greater efficiency in the collection, pooling, management and use of scarce health care resources.

**Combating social exclusion**

Community-based health financing schemes also appear to extend coverage to a large number of rural and low-income populations that would otherwise be excluded from collective arrangements to pay for health care (41, 42, 44, 50). However, there have been reports that the poorest of the poor are often excluded from community financing arrangements. This is predominantly attributable to a lack of affordability.

![Fig. 2. Recurrent costs from prepayment. Based on data from Bennet et al (16), this graph shows the cost recovery from six prepayment schemes. The range is from 12% to 51% of recurrent expenditure. This shows that for these schemes, the resources collected contribute significantly to but do not cover the full recurrent costs. Therefore, other sources of funding, such as out-of-pocket spending, government subsidies and donor grants, are needed](WHO 01 724)
population (36). These user charges add significantly to the financial hardship of poor households, which are often fully exposed to the financial risks associated with illness.

The review of selected experiences in Asia and Africa also suggested measures that governments could take to strengthen community financing. These included subsidizing the contributions made by the poor, providing technical assistance to improve capacity for scheme management, and the creation of links with formal health care networks. A critical factor was the matching of willingness and ability to pay with the expectation of benefits to be received at a later time. The regional reviews highlighted several areas of government action that appeared to have an adverse impact on the function of community financing schemes. Top-down interference with the design and management of the schemes appeared to have a particularly negative effect on their function and sustainability.

**Main findings of micro-level household survey analysis**

The aim of the micro-level household survey analysis (35) was to provide direct empirical evidence relating to the following questions:

- What characteristics affect the decision of households to join community-based prepayment schemes?
- Do community health financing schemes provide financial protection against the cost of illness for their members?

As standardized household surveys did not allow us to pursue these matters, five small-scale, non-standardized household surveys were selected for analysis. Two data sets were obtained for India, and one was obtained for each of Rwanda, Senegal, and Thailand.

**Determinants of social inclusion in community financing**

The main findings of the study suggested that community financing can be inclusive of the poor, even in the most economically deprived context: in India and Rwanda the poor were just as likely to be part of a prepayment scheme as the non-poor. On the other hand, this cannot be generalized to all community financing schemes. In Senegal and Thailand, for example, household income was a significant determinant of membership of a prepayment scheme. This suggested that community financing structures did not automatically remove financial barriers to risk protection in the sample of schemes that we analysed. It was concluded that the design characteristics of the schemes might significantly affect the achievement of good targeting under community schemes, just as they mattered for large-scale public expenditure programmes.

**Determinants of financial protection in community financing**

In three of the surveys, members of community financing schemes reported higher use of health care and at the same time lower out-of-pocket expenditures. This confirmed the original hypothesis that prepayment and pooling of risk reduced financial barriers to health care. Furthermore, the analysis indicated that, even when individuals were members of a community financing scheme, being poor and lacking the ability to pay additional out-of-pocket charges remained a significant barrier to access.

**Main findings of macro-level cross-country analysis**

Most routine statistical sources at national level do not include data on the share of overall financing that is channelled through either community-based or private health insurance schemes (37). The macro-level analysis therefore focused on the degree of collective risk-sharing provided at low income levels through different combinations of general tax revenues and social insurance. The objective was to examine the degree to which risk-sharing had a beneficial impact on the five indicators of health systems performance described in *The World Health Report 2000* (3).

The results of the macro-level cross-country analysis gave empirical support to the hypothesis that broad risk-sharing in health financing had a significant impact on the level and distribution of health, financial fairness and responsiveness indicators. The results even suggested that risk-sharing corrected for, and possibly outweighed, the negative effect of overall income inequality. This would mean that financial protection against the cost of illness might be a more effective strategy for poverty alleviation in some settings than direct income support.

**Conclusions and recommendations**

Most community financing schemes have evolved in settings of severe economic constraint, political instability and unsatisfactory governance. Usually, government taxation capacity is weak, formal mechanisms of social protection for vulnerable populations are absent, and government oversight of the informal health sector is lacking. In such circumstances, community involvement provides a first step towards improved financial protection against the cost of illness and improved access to priority health services.

Governments can contribute to the effectiveness and sustainability of community health financing schemes for rural, informal sector and poor populations through key policies involving the following: increased and well-targeted subsidies boosting the health insurance contributions of low-
income populations; insurance for protection against fluctuations in expenditure; reinsurance to enlarge the effective size of small risk pools and cover catastrophic events; prevention and case management techniques to limit expenditure fluctuations; technical support to strengthen the management capacity of local schemes; and the establishment and strengthening of links with formal financing and provider networks.

Conflicts of interest: none declared.

Résumé
Efficacité du financement communautaire de la santé pour faire face au coût de la maladie
L’un des plus grands défis auxquels se trouve confrontée la communauté internationale pour le développement est de savoir comment financer et assurer les soins nécessaires à plus de 1,3 milliard de travailleurs démunis des zones rurales et du secteur informel dans les pays à revenu faible et moyen. Le présent article recapitule les principaux résultats d’une vaste étude de la littérature traitant des mécanismes financiers communautaires, ainsi qu’un certain nombre d’expériences réalisées dans les régions de l’Afrique et de l’Asie. Pour la plupart, les systèmes de financement communautaire ont été élaborés sur fond de séries de difficultés économiques, d’instabilité politique et de mauvaise gestion des affaires publiques. Une microanalyse des données relatives aux ménages indique que le financement par la collectivité améliore l’accès des travailleurs des zones rurales et du secteur informel aux soins dont ils ont besoin, leur assurant en quelque sorte une protection financière face au coût de la maladie. Une macroanalyse de l’ensemble des pays vient renforcer de manière empirique l’hypothèse selon laquelle le partage des risques en matière de financement de la santé a d’importantes répercussions tant sur le niveau que sur la distribution des indicateurs de la santé, de l’efficacité du financement et de la capacité de réactivité.

Les recherches faites dans le cadre du présent article font ressortir cinq grandes options que les gouvernements peuvent choisir pour améliorer l’efficacité et la viabilité des systèmes de financement existant au niveau communautaire, à savoir:

a) subventions accrues et bien ciblées pour garantir le paiement des primes des populations à faible revenu; b) assurance contre les fluctuations des dépenses et réassurance pour augmenter la taille réelle des petites caisses d’assurance de groupe; c) techniques efficaces de prévention et de prise en charge des cas pour limiter les fluctuations des dépenses; d) appui technique pour renforcer la capacité de gestion des caisses locales; et e) création et renforcement des liens avec les réseaux officiels de financement et de prestataires.

Resumen
Eficacia del financiamiento comunitario de la salud para hacer frente al costo de las enfermedades
Uno de los grandes retos que afronta la comunidad internacional para el desarrollo consiste en determinar la manera de financiar y prestar la atención sanitaria que necesitan los más de 1300 millones de pobres rurales y trabajadores del sector no estructurado que hay en los países de ingresos bajos y medios. En este artículo se presentan los principales resultados de un extenso estudio de la literatura relativa a los arreglos de financiamiento comunitario, así como determinadas experiencias de las regiones de Asia y África. La mayoría de los sistemas de financiamiento comunitario se han desarrollado en un contexto de graves limitaciones económicas, inestabilidad política y falta de una buena gobernanza. El microanálisis de los datos de hogares indica que el financiamiento comunitario mejora el acceso de los trabajadores rurales y del sector no estructurado a la atención sanitaria que necesitan y les garantiza cierta protección financiera frente a los gastos causados por las enfermedades. El macroanálisis por países proporciona apoyo empírico a la hipótesis de que la participación en el riesgo en materia de financiamiento sanitario tiene un efecto importante en cuanto atañe tanto al nivel como a la distribución de los indicadores de salud, equidad financiera y capacidad de respuesta.

La investigación de fondo realizada para este artículo apunta a cinco políticas clave de las que disponen los gobiernos para mejorar la eficacia y sostenibilidad de los planes de financiamiento comunitario existentes. Se trata de las siguientes: (a) subvenciones más cuantiosas y bien focalizadas para pagar las primas de las poblaciones de bajos ingresos; (b) seguros contra las fluctuaciones de los gastos, y reaseguros para ampliar el tamaño eficaz de los sistemas pequeños de mancomunación del riesgo; (c) técnicas eficaces de prevención y gestión de casos para limitar las fluctuaciones de gastos; (d) apoyo técnico para reforzar la capacidad de gestión de los planes locales, y (e) creación, y refuerzo, de vínculos con las redes formales de financiamiento y de proveedores.

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