

### Poverty and health sector inequalities\*

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**Abstract** Poverty and ill-health are intertwined. Poor countries tend to have worse health outcomes than better-off countries. Within countries, poor people have worse health outcomes than better-off people. This association reflects causality running in both directions: poverty breeds ill-health, and ill-health keeps poor people poor. The evidence on inequalities in health between the poor and non-poor and on the consequences for impoverishment and income inequality associated with health care expenses is discussed in this article. An outline is given of what is known about the causes of inequalities and about the effectiveness of policies intended to combat them. It is argued that too little is known about the impacts of such policies, notwithstanding a wealth of measurement techniques and considerable evidence on the extent and causes of inequalities.

**Keywords** Poverty; Health status; Income; Health services accessibility; Financing, organized; Social justice (source: MeSH, NLM).

**Mots clés** Pauvreté; Etat sanitaire; Revenu; Accessibilité services santé; Organisation financement; Justice sociale (source: MeSH, INSERM).

**Palabras clave** Pobreza; Estado de salud; Renta; Accesibilidad a los servicios de salud; Organización del financiamiento; Justicia social (fuente: DeCS, BIREME).

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*Voir page 102 le résumé en français. En la página 103 figura un resumen en español.*

## Introduction

Poverty and ill-health are intertwined. Poor countries tend to have worse health outcomes than better-off countries. Within countries, poor people have worse health outcomes than better-off people. The association between poverty and ill-health reflects causality running in both directions. Illness or excessively high fertility may have a substantial impact on household income (1, 2) and may even make the difference between being above and being below the poverty line (3). Furthermore, ill-health is often associated with substantial health care costs (4). But poverty and low income also cause ill-health (5). Poor countries, and poor people within countries, suffer from a multiplicity of deprivations that translate into high levels of ill-health (6, 7). Poor people are thus caught in a vicious circle: poverty breeds ill-health, ill-health maintains poverty (Fig. 1).

Several key international organizations and bilateral donors now have the improvement of the health outcomes of the world's poor as their primary objective (8–10). This reflects an increasing tendency of such organizations to define their goals in terms of poverty reduction (11, 12) and an ever broader interpretation being given to the term “poverty” (6, 13). However, it also reflects growing agreement that inequalities in health outcomes between rich and poor are unjust and unfair (14), not because the poor are somehow more deserving

than the better-off but because these inequalities evidently correspond to widely differing constraints and opportunities facing the poor and better-off rather than a tendency for the two groups to make different choices (15–20). The deleterious effects that ill-health has on household living standards are also increasingly seen as an issue of social justice, possibly reflecting a view that the income losses and health care payments associated with ill-health are involuntary and simply the consequence of unwanted health “shocks” (21). This sets health expenditure apart from most other items in household budgets and leads naturally to the view that the community as a whole should bear the financial burden of such shocks, instead of allowing them to impact adversely on income inequality and poverty. In several countries in the Organisation for Economic Co-operation and Development (OECD) (22) and apparently elsewhere (23) there appears to be an acceptance of the view that both out-of-pocket payments and payments towards protection schemes should be linked to household income, a view that WHO has recently championed (24).

This paper provides an overview of research relating to inequalities in health to the disadvantage of the poor, and to changes in impoverishment and income inequality associated with payments for health care. The broader issue of impoverishment associated with income loss through ill-health is not considered because the creation of schemes to protect

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Fig. 1. Cycle of health and poverty



people from such loss goes beyond the area of health policy as currently interpreted. Nevertheless, it should be noted that lost income is probably a larger cause of impoverishment than out-of-pocket payments for health services (25). The evidence on health inequalities and impoverishment is discussed, together with the factors driving the results and the effectiveness of policies in these areas.

### Evidence of health inequalities between the poor and non-poor

In Europe there has been a long tradition of measuring socioeconomic inequalities in health, covering both methodology (26–28) and empirical analysis (29–37). Less empirical work has been undertaken on the subject in other regions, especially in the developing world (38–42).

The following key findings in the literature on empirical data are worth highlighting. Firstly, inequalities in health are almost always to the disadvantage of the poor. The poor tend to die earlier and to have higher levels of morbidity than the better-off.

Secondly, inequalities tend to be more pronounced for objective indicators of ill-health, such as anthropometric measures of malnutrition and mortality, than for subjective indicators. It is often noted that the latter sometimes produce perverse gradients in developing countries, with the better-off reporting worse health than the poor (43). But this tends to occur with indicators that are highly subject to the influence of transitory factors, e.g. whether or not a respondent has experienced illness in the previous two weeks. A similar pattern emerges in industrialized countries in relation to such indicators (44). In the developing (45) as in the industrialized world (31, 36, 46), longer-term illness indicators, e.g. long-standing illness, limitation of a major activity, and self-assessed health, tend to show inequalities to the disadvantage of the poor.

Thirdly, there are large variations in the extent of health inequalities across countries, although these variations themselves vary with the indicators of health and socioeconomic

status used. For example, Latin America appears to have higher inequalities in child health between poor and non-poor than other parts of the developing world, whatever health indicator is used. By contrast, inequalities in child mortality and malnutrition are less pronounced in sub-Saharan Africa than in North Africa, Asia, and the Near East, but the opposite is true of inequalities concerning diarrhoea and acute respiratory infections (47).

Fourthly, socioeconomic inequalities in health seem to be widening rather than narrowing. This is true of both the developing (48–52) and industrialized world (28, 53–56).

### Causes of health inequalities: proximate determinants

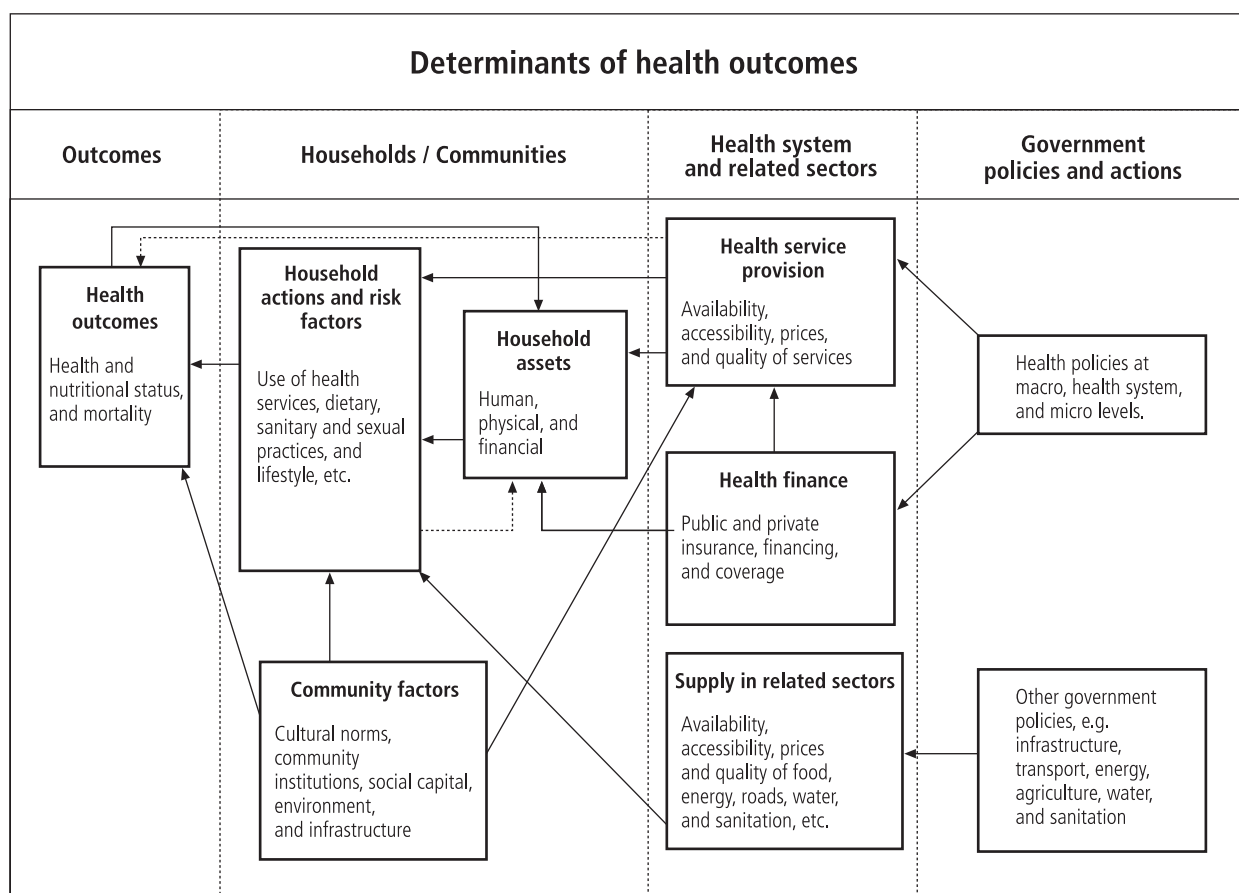
Fig. 2 outlines an approach to conceptualizing the various routes by which health outcomes are determined (7). It provides a framework for understanding health inequalities between the poor and the better-off.

#### How do proximate determinants vary across socioeconomic groups?

The various factors at the household and community levels which have a direct influence on health outcomes are referred to in some circles as the proximate determinants of health (57) and in others as the health inputs into the production of health (58). A good deal is known about what they are and their etiology (7, 59). They vary widely between households and they tend to be worse in poor households than in better-off households. At one level this explains why there are socioeconomic inequalities in health and why they disfavour the poor. However, the inequalities in the proximate determinants of health vary between determinants and, like inequalities in health itself, also vary between countries.

This is most striking in the case of health service utilization. In the OECD countries the poor tend to use health services more than the better-off, and the question arises as to whether, in the light of their greater medical needs, the greater

Fig. 2. A conceptual framework for understanding health inequalities



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utilization is sufficient (60–65). The picture is quite different in the developing world. Poor children in poor countries are typically far less likely to be immunized than better-off children (39). This is so even in countries with a national immunization programme under which services are provided free at the point of use (66). The utilization of oral rehydration therapy is lower among poor children than among the better off, even though the incidence of diarrhoea is greater among the poor (39). In those countries where the use of oral rehydration therapy is higher among the poor, the inequality is far smaller than the inequality in the incidence of diarrhoea.

The failure of health services to reach the poor in developing countries, despite their higher disease burden, is not just a matter of the better-off using their higher incomes to purchase care from the private sector. The poor also receive less of government subsidies to the health sector (67–71). The bias in favour of the rich is especially pronounced in the hospital sector, which benefits from the largest part of government spending. However, a few developing countries apparently manage to achieve pro-poor distributions of public spending on health care, e.g. Costa Rica and Malaysia (47). In India, the State of Kerala manages to secure a roughly even distribution of health subsidies across income groups (72).

Less quantitative evidence seems to be available on the degree of inequality in other proximate determinants of health. The prevalence of breastfeeding is often higher among lower

socioeconomic groups (48) but this does not seem to be true of the other proximate determinants of child health. Levels of alcohol consumption are higher among the lower socioeconomic groups in several countries of eastern Europe, Finland, and France (73). Smoking and poor diet tend to be concentrated among the lower socioeconomic groups in the United States of America and northern Europe but not in southern Europe and France (73). Among black people in South Africa, smoking is positively associated with socioeconomic status, whereas among white people the opposite is true (74).

### Contributions of inequalities by proximate determinants

Knowing simply that the distribution of one or other proximate determinant disfavours the poor does not tell us how important this inequality is as part of the explanation of health inequalities. The contribution to inequality in health by a particular proximate determinant depends partly on its distribution across socioeconomic groups and partly on its impact on health (52). The Whitehall study of British civil servants assessed the relative contribution of inequalities in the various proximate determinants of health to inequalities in health. North et al. (75) tried to explain the strong inverse relation between grade of employment and absence from work because of sickness. Several risk factors were identified, including health-related behaviours, work characteristics, low

levels of job satisfaction, and adverse social circumstances outside work. Standardization methods showed that inequalities in these risk factors accounted for only about a third of the differences in such absence between grades. Marmot et al. (76) undertook a similar exercise looking at coronary heart disease.

## Causes of health inequalities: underlying determinants

Why are there inequalities in the proximate determinants of health? Fig. 2 shows the influences of household resources, community factors, and health system determinants. In each of these underlying determinants of health (57, 77, 78) the poor tend to be disadvantaged.

### How do underlying determinants vary across socioeconomic groups?

Income and assets, whose inequalities vary widely by country (79), are a key component of household resources. In developing countries under otherwise constant conditions, higher income is associated with more frequent and more intensive use of health services in both the private and public sectors (67); the use of modern health care providers rather than traditional practitioners (67); and the number of children a woman has and the age at which she has her first child. Most dietary and child-feeding practices also improve with higher levels of income, as do sanitary practices (e.g. handwashing and disposal of faeces). The human assets of knowledge, literacy, and education, whose levels tend to be lower among the poor (39, 80), also influence household decisions with regard to the proximate determinants of health. Education, especially that of women, is strongly associated with many behaviours and choices that are conducive to good health, even after controlling for income (77). It is not just the levels of these variables that matter, but also their distribution within the household, especially between men and women. A low level of control over household resources by women, which seems especially likely in poor households, often harms health outcomes for them and their families (7).

### Community factors

With regard to community factors it is important to consider environmental and geographical influences. It is comparatively difficult to reach a health centre if roads are impassable during the rainy season. The environment also matters. Good sanitary practices are relatively difficult to maintain if the conditions of water supply and sanitation in the local community are poor. Communities often share similar values and norms, which, through peer pressure, often play a large part in shaping health behaviours (81). At the community level, as at the household level, the poor are likely to be disadvantaged. For example, they are more likely to live in remote areas. In poor communities, moreover, social pressures among teenagers tend to be strongest and attitudes towards women tend to be least favourable to good health outcomes (81).

There is a good deal of evidence on the impacts of health system determinants on health outcomes and health service utilization. Availability, possibly defined in terms of staff in local health facilities, often emerges as an important

determinant of service utilization and health outcomes (82–84). Accessibility, i.e. the ease with which people can reach facilities, is also important. Travel time is significant in this connection: it depends on the distance people have to travel, the transport system, road infrastructure, and geographical factors. Distance is the most frequently encountered variable in empirical studies of utilization and often has a significant impact on it (82, 85–88). A higher money price tends to reduce or at least delay utilization, especially among the poor, unless accompanied by improvements in service quality (89, 90). Insurance tends to raise the usage of health services (91, 92). Quality, or, more exactly, perceived quality, also increases the demand for health services (82, 88, 89, 93). In most of these areas the poor are disadvantaged. They tend to have to travel further (93) and for longer periods (67) in order to reach health facilities. The quality of care, interpreted broadly to include service and amenities as well as technical quality, also tends to be comparatively low in facilities serving the poor (87). The poor, who are the most price-sensitive users of health services, frequently face a higher price at the point of use because they are less likely to have insurance coverage, whether private (91) or public (94). This tendency is sometimes offset by fee-waiver schemes, although in practice these often have the effect of exempting the near-poor rather than the poor (90, 94, 95).

### Contributions of inequalities by underlying determinants

As with the proximate determinants of health, knowing simply that the distribution of one or other underlying determinant disfavours the poor does not indicate how important this inequality is as part of the explanation of health inequalities. The method used in the Whitehall study (75) is one way of tackling this issue. Another is to use decomposition analysis, linking the inequalities in the various determinants of health, via a regression model of the determinants of health, with a measure of inequalities in health (52).

This method was used to unravel the underlying causes of inequalities in childhood survival in Cebu in the Philippines (96). Several significant determinants of child survival were identified, including mother's education, household income, health insurance coverage, drinking-water availability, sanitation conditions, travel time or distance to various health service facilities, staffing levels in local primary care facilities, and local availability of key drugs. In respect of its contribution to survival inequalities between poor and non-poor children, income was the most important of these. Inequalities in mother's education were also found to be significant. Inequalities in health service availability were relatively small, so that although they were found to be important influences on the average child's survival prospects they did not help to explain survival differences between poor and non-poor children. The same method was used to examine the causes of increased inequalities in malnutrition in Viet Nam during 1993–98 (52) and the causes of inequalities in self-assessed health amongst 33-year-olds in the United Kingdom (97). In both studies, as in the Cebu study, inequalities in variables at the level of the individual (e.g. education) and the household (e.g. income, housing, the availability of safe drinking-water, and sanitation) together accounted for a large share of health inequality.

## Poverty and paying for health care

In addition to its concern for improving the health of the poor, the international development community is also concerned with the impact of the costs of health care and lost income on a household's ability to purchase things other than health care. In other words, in addition to the desire to ensure that health improvements occur, especially among the poor, there is a desire to ensure that achieving this does not lead to an excessive decline in the living standards of the households involved.

There are various possible ways in which to interpret these concerns (21). One is that the distribution of health care costs should not be such as to increase income inequality. Regressive payments, i.e. payments that absorb a larger share of a poor household's prepayment income than that of a rich household's, violate this requirement. Out-of-pocket payments are regressive in most OECD countries (98, 99) and in some developing countries, including rural Bangladesh (100), Burkina Faso (101), China (102), Paraguay (101), Sierra Leone (103), and Thailand (104). In several developing countries, however, they are either proportional to income, as in Viet Nam (21, 105), or progressive, as in Guatemala (101), India (72), Mexico (106), Nepal (107) and South Africa (101). In the first group of countries the poor apparently use services but pay a large share of their income for them, while in the latter group it is primarily the better-off who use and pay for health services. A concern over the regressivity of out-of-pocket payments overlooks the possibility that this might be offset, at least in part, by progressivity in prepayments, i.e. taxes, social insurance contributions and private insurance premiums. In many OECD countries the progressivity of these indirect payments is, in fact, more than sufficient to offset the regressivity of direct payments (98).

A second interpretation of these concerns over health care payments is that households should not have to spend more than a specific percentage of their income on health care, payments above this threshold being classified as catastrophic (21). In several countries more than 1% of all households recently spent half or more of their non-food expenditure on health care (24). Another recent study explored trends in catastrophic health spending in Viet Nam, and found that irrespective of the cut-off point used and irrespective of whether spending was calculated as a share of total or non-food expenditure, the proportion of the population making catastrophic payments fell between 1993 and 1998 (21).

A third interpretation is that health care costs should not drive households into or further into poverty. The poverty impact can be measured by the change in the poverty head count (i.e. the proportion of the population in poverty), or the change in the poverty gap (i.e. the average shortfall from the poverty line), induced by health care payments (21). With the poverty gap it is possible to distinguish between already poor people becoming even poorer and previously non-poor people becoming poor. Calculations along these lines suggested that out-of-pocket spending on hospital care might have raised the head count in India by 2% (72), and that, for a food-based poverty line, overall spending on health care in Viet Nam might have added approximately 4.4% to the head count in 1993 and 3.4% in 1998 (21). The impact on the poverty gap in Viet Nam was a good deal smaller than the impact on the head count (1.4% and 0.8% in 1993 and 1998 respectively) and three-quarters of this impact was attributable to already poor people

becoming even poorer. Most of the poverty impact of out-of-pocket payments in Viet Nam was attributable to non-hospital expenses.

## Health sector inequalities and public policy

### Broad-brush studies of policy effects

In a comparative study of nine OECD countries it was found that inequality in self-assessed health was not significantly associated with total health care expenditure per capita, the percentage spent publicly, or gross domestic product per capita, but was positively and significantly associated with income inequality (36). However, in another investigation in which aggregate data from developing countries and a decomposition approach were used, it was found that public spending on health had a larger impact on child mortality among the poor than among the non-poor, and hence served to reduce health inequality (108). In another comparative study it was found that differences between OECD countries in the extent of inequality and inequity in health care utilization partly reflected differences in how the poor and better-off fared with respect to user fees, but not in the extent of insurance coverage (63). This study also found evidence that the distribution of utilization across income groups reflected some characteristics of the delivery system, e.g. how providers were paid, but not others, e.g. the presence of a general practitioner gatekeeper scheme. In another study of OECD countries it was reported that the progressivity of combined direct and indirect health care payments closely reflected the financing mix of the system. In tax-financed systems, payments tended to be broadly proportional to income; in social insurance systems, they tended at worst to be mildly regressive but were sometimes proportional or even slightly progressive; and in predominantly privately financed systems, payments tended to be regressive (98).

### Effects of specific programmes

Yip & Berman (109) examined inequalities in insurance coverage between poor and better-off children under Egypt's School Health Insurance Programme (SHIP). They also exploited exogenous differences in health insurance coverage in order to assess the programme's impact on the distribution of both health service utilization and out-of-pocket payments. Although SHIP was intended to cover all children in education, i.e. those aged 6–18 years, at the time of the survey some children attending school had not yet been covered. These children provided a control group but the authors used regression analysis to control for other differences between children who were covered and those who were not covered. SHIP coverage rose with income, mostly because poorer children were less likely to be in school but also because children who were in school but not yet covered were more likely to be poor. SHIP coverage increased the probability of a visit to a formal health care provider for all income groups but there was an especially large impact among children in the poorest quintile. SHIP coverage resulted in lower out-of-pocket payments for all income groups but the impact was very much smaller in the poorest and richest quintiles than in the middle of the income distribution.

Victora et al. (48) presented evidence on Ceará's maternal and child health programme in Brazil, which aimed specifically to narrow health inequalities. Substantial improvements were observed in average levels of service usage and outcomes

following the introduction of the programme. However, although there was a decline in inequalities in vaccination coverage, weighing, and the utilization of oral rehydration therapy, there was an increase in inequality between poor and better-off children in all three of the outcomes studied. The authors also examined the combined impact of a variety of programmes introduced in the city of Pelotas, Brazil. These included a large increase in the number of first-line government health facilities, the introduction of three neonatal care units, and a general increase in government expenditure on preventive and curative health. Over the period studied the proportions of pregnant women receiving antenatal care and of children receiving three doses of diphtheria/pertussis/tetanus vaccine in their first year of life increased, while inequalities in the utilization of these services fell. Furthermore, declines in the average rates of infant mortality and malnutrition were accompanied by reductions in inequalities in these outcomes.

Before-and-after comparisons with control groups, a more effective way of establishing programme impact than simple before-and-after studies, are relatively rare in this field. One such study was that of Bhuiya et al. (110), who considered the impact on differentials in mortality of children between the ages of 1 and 5 years of a maternal and child health programme delivered by Bangladesh's International Centre for Diarrhoeal Disease. In some areas not covered by the programme, i.e. the control group, only government health services were provided, and in others a nongovernmental organization (BRAC, formerly known as the Bangladesh Rural Advancement Committee) was operating a socioeconomic development programme in addition to government health service provision. The BRAC programme was aimed at both poverty alleviation and women's development and most of its activities, which included essential health care, were targeted at poor women. During the study period, both areas saw a reduction in child mortality rates by slightly over 40%, the reduction being marginally higher in the control area. However, the spread of reductions across income groups was quite different. In the control area the biggest percentage reduction was in the richest group, whereas in the area of the maternal and child health programme the largest reductions were among the poorest group.

Diop et al. undertook a before-and-after comparison of two districts in Niger, where financing reforms were introduced in the early 1990s (111). Before the study began, drug availability was improved, health personnel were trained, and management and supervision capacity was strengthened. In Say District, user fees were introduced with exemptions for certain categories, and fee revenues were retained at the district level and used to finance pharmaceutical products and to set up a solidarity fund. In Boboye District, lower fees were set but a local tax was introduced and earmarked for the district's health fund. In Illéla District, which served as a control, the status quo was maintained. In the poorest quarter of the populations in both Illéla and Say, utilization of public health facilities declined

during the test period. The decline was larger in Say, where fees were charged, and in this district the decline in utilization was proportionally larger among the poorest quarter of the population than among the population as a whole. However, neither district's change in utilization among the poorest quarter was statistically significant. By contrast, utilization doubled among the poorest quarter of the population under the "fee-cum-tax" system in Boboye. This change, which was statistically significant, was much larger than the change for the district's population as a whole.

## Conclusions

Three points are worth highlighting. First, we know a good deal about the extent of health inequalities between poor and non-poor in developing countries, and a reasonable amount about inequalities in health determinants. Most striking in this connection is the failure of publicly financed health care to reach the poor in almost all developing countries, an issue that deserves serious attention from governments and aid agencies.

Second, too little is known about the relative importance of inequalities in the determinants of health and health service utilization. What we do know suggests that inequalities in health, and most probably in service utilization, very largely reflect inequalities in variables at the individual and household levels, such as education, income, location, and housing characteristics. This indicates that policies aimed at combating health sector inequalities should aim to reduce both inequalities in, for example, the quality and availability of health services (i.e. the supply side), and inequalities in income, knowledge, especially health-specific knowledge, accessibility of health services, the availability of safe drinking-water, and sanitation, and so on (i.e. the demand side). Health ministries should work more closely with other ministries, but should also take a wider view, e.g. exploring alternative delivery methods to reach the poor and finding improved ways of increasing knowledge among the poor about healthy behaviours.

Third, too little is known about the impact of programmes and policies on health sector inequalities. There is undoubtedly a large gap in our knowledge on how best to reach the poor in the health sector. In order to fill this gap, more work is needed along the lines of the above studies related to health sector inequalities and public policy. ■

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## Résumé

### Pauvreté et inégalités dans le secteur de la santé

Pauvreté et mauvaise santé vont de pair. Les pays pauvres tendent à avoir de plus mauvais résultats dans le domaine de la santé que les pays plus nantis, et à l'intérieur d'un même pays les pauvres ont une moins bonne santé que les riches. Cette association révèle une

relation de causalité à double sens: la pauvreté engendre la mauvaise santé, et la mauvaise santé entretient la pauvreté. Le présent article expose les faits concernant les inégalités de santé entre pauvres et non-pauvres et les conséquences des dépenses de

santé sur l'appauvrissement et les inégalités de revenus. Il fait brièvement le point des connaissances sur les causes des inégalités et sur l'efficacité des politiques destinées à les combattre. D'après

l'auteur, on ne connaît pas assez l'impact de telles politiques, malgré la variété des techniques de mesure et l'abondance des données sur l'étendue des inégalités et sur leurs causes.

## Resumen

### Pobreza y desigualdades en el sector de la salud

La pobreza y la mala salud son fenómenos interrelacionados. Los países pobres tienden a presentar peores resultados sanitarios que los más pudientes, y dentro de cada país las personas pobres tienen más problemas de salud que las acomodadas. Esta asociación refleja una relación de causalidad que funciona en los dos sentidos: la pobreza genera mala salud, y la mala salud hace que los pobres sigan siendo pobres. En este artículo se examina la evidencia disponible respecto a las desigualdades sanitarias entre las personas pobres y las que no lo son, así como respecto a

las repercusiones que en forma de empobrecimiento y desigualdad de ingresos pueden tener los gastos en atención de salud. Se hace una exposición sucinta de los actuales conocimientos sobre las causas de las desigualdades y sobre la eficacia de las políticas destinadas a combatir las, y se señala que es demasiado poco lo que se sabe acerca de los efectos de esas políticas, pese a las abundantes técnicas de medición disponibles y a los muchos datos obtenidos sobre la magnitud y las causas de las desigualdades.

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