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## 19 Equity in health and health care systems in Asia

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### 1. Introduction

This chapter reviews the empirical research on equity in health systems in Asia, much of which has been informed and motivated by earlier work in Europe. The emphasis is on the findings for developing countries of Asia. The results for the high-income Asian economies, such as Japan, Hong Kong, Korea and Taiwan, typically resemble those for European countries, but it is in developing Asia that significant contrasts with the developed country literature emerge.

#### *Definitions of equity*

As a concept, equity has multiple meanings – for few of which there is universal agreement – and it can be applied to a variety of measures or objects of interest. The reader is referred to the comprehensive discussion by Wagstaff and van Doorslaer (2000) of the concept of equity in health economics. This chapter will generally follow their treatment of equity, and confine itself to consideration of the following types of equity in Asian health systems: (i) equity in health status, (ii) equity in financing of health services, (iii) equity in the delivery of health services, and (iv) equity in terms of risk protection.

#### *Development of empirical analysis of equity in Asian health systems*

Systematic empirical work on equity in health systems in Asia does not have as extensive a history as in Europe or the OECD generally. Historical evidence of socioeconomic and sub-national differentials in health status, as proxied by mortality, exists for several countries with good mortality data from the early part of the twentieth century, such as Japan, Sri Lanka and Malaysia (Mosk and Johansson, 1986; Meegama, 1986). However, empirical analysis of equity in health systems commenced only in the 1970s, with several pioneering and independent studies of benefit incidence of government health spending in countries, such as Malaysia and Sri Lanka (Meerman, 1979; Alailima and Mohideen, 1983), and with other studies of socioeconomic and geographical inequalities in health status and health care utilization in Japan (Hasegawa, 2001). Since the early 1990s, there has been a substantial expansion in the empirical work in countries at all income levels, and in all three areas of equity in financing, delivery and health status.

In the area of equity in health status, outside the high-income economies of Japan, Korea, Taiwan and Hong Kong SAR, researchers have made the greatest progress in revealing differentials in child mortality (Gwatkin et al., 2000; Gwatkin, 2001). A large number of studies have examined the incidence of public health spending in most countries, and an emerging interest in the literature since 2000 has been a concern with equity in financing. This latter concern has not only been with progressivity of financing, but also with the impact on household welfare of catastrophic health expenses. A recent feature of this literature has been a comparative perspective, with researchers collaborating

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on multi-country regional studies, which is best exemplified by the Equitap study ([www.equitap.org](http://www.equitap.org)), an EU-sponsored collaboration involving 17 research groups in Asia and Europe.

What makes the emergence of this regional literature so illuminating and distinctive from the pioneering comparative work in Europe is the wide diversity in health care systems and levels of development found in Asia, and the continuing transformation of many national health systems. This provides a potentially rich evidence base for examining which attributes of systems ultimately matter for health equity, as well as opportunity to examine the impact of major system changes on overall equity. This has been exploited in recent years, by several authors in China, Korea, Thailand and Taiwan, who have examined the impact of major financing changes on overall equity (Liu et al., 1999; Liu et al., 2002; Lu, forthcoming).

### **2. Empirical evidence**

#### *Inequalities in health status*

Empirical assessment of income-related inequalities in health status in low- and middle-income Asia has not been as extensive as in Europe, largely because of the lack of appropriate data, such as vital registration systems that are reliable and comprehensive (and encode proxies for socioeconomic status) outside the advanced Asian economies, and some unusual demographic surveillance sites, such as Matlab in Bangladesh (Bhuiya et al., 2001). In addition, the other potential data source for assessing health inequalities – population surveys – presents particular problems in the poorer Asian countries. Few of these surveys have collected objective health indicators in tandem with income measures, and most use subjective health indicators based on self-reporting to simple questions (as opposed to more systematic instruments, such as the SF-36). This approach is particularly problematic, since in many of the poorer countries, richer individuals typically report greater levels of sickness than the poor, which is neither intuitively reasonable nor consistent with other objective evidence. For illustrations of this from Bangladesh, Nepal and Sri Lanka see Institute of Policy Studies (2003). In India, there is an inverse relationship between objective indicators of state-level mortality and self-reported sickness rates, as noted by Sen (2002). Recognition of this problem by the WHO has led to an approach that uses reporting on vignettes to anchor reported own health (Tandon et al., 2001), although it should be noted that such methods are yet to be universally accepted, and are difficult to apply to most existing datasets.

In the absence of systematic data on health status inequalities in the overall population, the major empirical advance in the past five years has arisen from the development of methods, based on principle component analysis, to formulate asset indices as proxies for income level in surveys lacking such direct measures (Filmer and Pritchett, 2001). These methods have enabled researchers to exploit the widely available Demographic and Health Surveys (DHS). This has contributed greatly to the knowledge on differentials in child and maternal health in most low-and middle-income Asian countries with DHS data (Gwatkin, 2000; Gwatkin et al., 2000). The evidence for differentials in infant and child mortality rates from DHS are summarized in Table 19.1. Sharp income gradients exist for both measures of health status, with differentials greatest in countries where the

*Equity in health and health care systems in Asia* 207*Table 19.1 Infant and child mortality rates in the Asian region*

|                                   | Quintiles |        |       |        |       | Concentration index |
|-----------------------------------|-----------|--------|-------|--------|-------|---------------------|
|                                   | First     | Second | Third | Fourth | Fifth |                     |
| <b>Infant mortality rates</b>     |           |        |       |        |       |                     |
| Bangladesh (1996/97)              | 96        | 99     | 97    | 89     | 57    | -0.066              |
| India (1992/93)                   | 109       | 106    | 90    | 66     | 44    | -0.149              |
| Indonesia (1997)                  | 78        | 57     | 51    | 39     | 23    | -0.195              |
| Nepal (1996)                      | 96        | 107    | 104   | 85     | 64    | -0.060              |
| Pakistan (1990/91)                | 89        | 109    | 109   | 96     | 63    | -0.051              |
| Philippines (1998)                | 49        | 39     | 34    | 25     | 21    | -0.156              |
| Sri Lanka (2000)                  | 26        | 23     | 16    | 13     | 17    | -0.126              |
| Vietnam (1997)                    | 43        | 43     | 35    | 27     | 17    | -0.143              |
| <b>Under-five mortality rates</b> |           |        |       |        |       |                     |
| Bangladesh (1996/97)              | 141       | 147    | 135   | 122    | 76    | -0.084              |
| India (1992/93)                   | 155       | 153    | 120   | 87     | 54    | -0.169              |
| Indonesia (1997)                  | 109       | 77     | 70    | 52     | 29    | -0.210              |
| Nepal (1996)                      | 156       | 164    | 155   | 118    | 83    | -0.096              |
| Pakistan (1990/91)                | 125       | 147    | 135   | 115    | 74    | -0.083              |
| Philippines (1998)                | 80        | 61     | 50    | 33     | 29    | -0.191              |
| Sri Lanka (2000)                  | 33        | 24     | 16    | 13     | 19    | -0.153              |
| Vietnam (1997)                    | 63        | 52     | 42    | 38     | 23    | -0.159              |

*Source:* Gwatkin et al. (2000), except for Sri Lanka from authors' own estimates.

mortality rates are highest. However, it should be noted that some significant data gaps remain, principally in China, Thailand and Malaysia.

*Equity in health care utilization*

The lack of data on reliable measures of health status in much of Asia has impeded assessment of horizontal equity in health care utilization. Analysis of whether equal treatment for equal need (ETEN) is achieved requires information on the individual's health status with which to standardize his or her utilization of services (Wagstaff and Van Doorslaer, 1991). As a result, most empirical work to date on equity in health care use in the region has not been standardized with respect to need, outside of Japan, Korea, Taiwan and Hong Kong. In the latter territories, empirical studies reveal patterns of health care use similar to that reported from most European nations: pro-poor gradients in overall medical care use, but a flat or pro-rich gradient when standardized for need (Yang and Kwon, forthcoming; Lu, forthcoming; Leung and Tin, forthcoming).

With the caveat that lack of standardization of use according to need is a major limitation, almost all of the empirical work to date has found evidence of significant pro-rich differentials in receipt of medical treatment in most of low-and middle-income Asia, particularly in countries where out-of-pocket payments are significant (Data International, 1998; Gao et al., 2002; Gao et al., 2001; Hotchkiss et al., 1998). Empirical studies have only revealed two consistent exceptions, where the income gradient is flat

*Table 19.2 Concentration indices for utilization of in-patient and out-patient services in the Asian region*

|                               | Hospital<br>in-patient care | Hospital<br>out-patient care | Ambulatory<br>out-patient care |
|-------------------------------|-----------------------------|------------------------------|--------------------------------|
| Bangladesh (1999/2000)        | 0.336                       | 0.064                        | -0.021                         |
| China (Gansu province) (2003) | 0.296                       | 0.043                        | NA                             |
| Hong Kong (2002)              | -0.381                      | -0.323                       | 0.009                          |
| Indonesia (2001)              | 0.424                       | 0.341                        | -0.017                         |
| India (1995/96)               | 0.361                       | 0.150                        | 0.118                          |
| South Korea (1998)            | -0.218                      | NA                           | -0.098                         |
| Nepal (1995/96)               | -0.010                      | -0.010                       | 0.010                          |
| Sri Lanka (1996/97)           | 0.010                       | -0.041                       | 0.153                          |
| Thailand (2002)               | 0.222                       | 0.083                        | -0.001                         |
| Taiwan (2001)                 | -0.117                      | -0.018                       | -0.027                         |

*Notes:*

- (a) Includes public and private sector services  
 (b) Unstandardized with respect to need

*Source:* Equitap Study results (forthcoming)

or reversed, namely Malaysia and Sri Lanka (Meerman, 1979; Institute of Policy Studies, 2003)

In Europe, an important finding has been of differences in the patterns of use of general practitioners and hospital specialists (Wagstaff and van Doorslaer, 2000). However, such differentials are of little interest in most of Asia, where general practitioners generally don't play the gate-keeping role they do in some European health systems. What has been of more interest in developing Asia has been examining differentials in use between public and private providers, because in the absence of social insurance in most countries, direct public provision of services is the mechanism by which public financing typically is delivered. Numerous country studies have examined choice of provider by income level in China (Gao et al., 2002; Gao et al., 2001) and elsewhere in Asia.

The most recent results from the Equitap Study (Somanathan and Rannan-Eliya, 2005) and from analysis of DHS data by Gwatkin et al. (2000) are summarized in Tables 19.2 and 19.3. The distribution of use of public and private hospital in-patient care services is highly pro-rich in most of Asia, with the richest one-fifth of the population accounting for 30–40 per cent of all services. The only exceptions are Sri Lanka, Hong Kong and Malaysia (not shown) where the poor have proportionately greater access to government hospital services. These patterns are reflected in Gwatkin et al.'s findings that the use of hospital services for child delivery is heavily concentrated among high-income groups in most low- and middle-income countries, with the exception of Sri Lanka and some states in India. Out-patient care use, particularly when publicly funded and provided, on the other hand is found to be less regressive than in-patient care in much of Asia, although not always pro-poor. Utilization of public sector ambulatory care services is typically the most progressive in all settings.

Table 19.3 Concentration indices for utilization of maternal and child health services in the Asian region

|                      | Medically assisted deliveries | Delivery in a public facility | Sought medical treatment if ill | Seen in a public facility among those medically treated |
|----------------------|-------------------------------|-------------------------------|---------------------------------|---|
| Bangladesh (1996/97) | 0.534                         | 0.476                         | 0.140                           | 0.131   |
| India (1992/93)      | 0.351                         | 0.321                         | 0.057                           | -0.009  |
| Indonesia (1997)     | 0.262                         | 0.345                         | 0.153                           | -0.043  |
| Nepal (1996)         | 0.449                         | 0.496                         | 0.084                           | 0.104   |
| Pakistan (1990/91)   | 0.488                         | 0.521                         | 0.079                           | 0.015   |
| Philippines (1998)   | 0.265                         | 0.244                         | 0.087                           | -0.148  |
| Vietnam (1997)       | 0.129                         | 0.190                         | 0.068                           | 0.048   |

Source: Gwatkin et al. (2000)

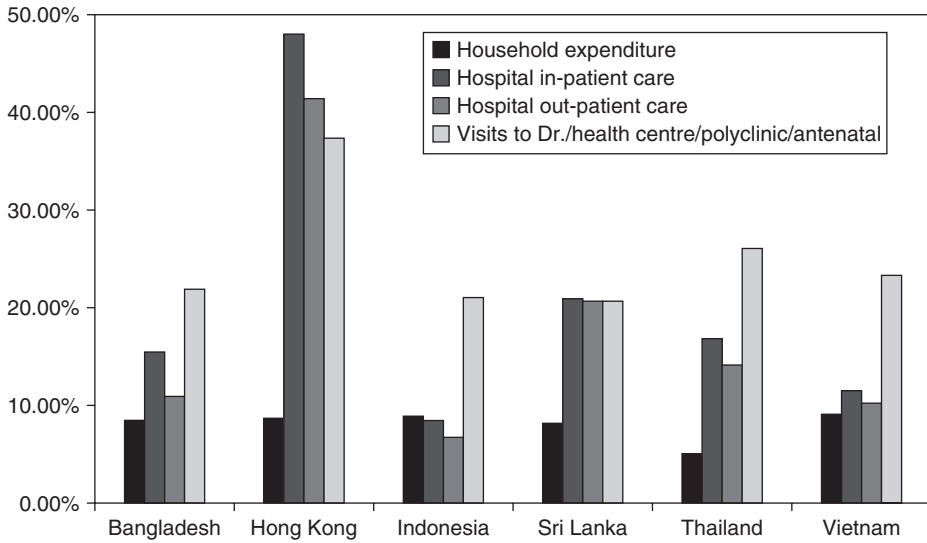
Gwatkin et al.'s work indicates that a fairly progressive distribution of public sector health care services in countries like Sri Lanka, the Philippines and Vietnam is associated with a more progressive distribution in the likelihood of any medical care being sought for child delivery, Acute Respiratory Infections (ARIs), diarrhoea and so on. This suggests that in most resource-constrained countries, achieving a pro-poor distribution of publicly-funded services is key to achieving a progressive distribution of all medical services overall, which justifies the concentration by researchers on the distribution of public services.

#### *Benefit incidence analysis*

Benefit incidence analysis examines the extent to which government spending for health reaches the poor. There is a well-established tradition of such work in developing Asia, reflecting the predominance of general revenue funding as a mechanism for financing health care in the public sector, starting with Meerman's (1979) study of government social spending in Malaysia, and a similar study in Sri Lanka by Alailima and Mohideen (1983). Other comprehensive national studies have been conducted in the past decade in several countries, including Bangladesh and Sri Lanka (Institute of Policy Studies, 2003), Indonesia (Lanjouw et al., 2001), Thailand, Kyrgyz Republic (Makinen et al., 2000) and Hong Kong (Rannan-Eliya and Somanathan, 1999). The study by Mahal et al. (2001) of most Indian states is of particular note, in that it shows that the variation between states in India is as great as within Asia, with the distribution of spending between pro-poor in some states, and pro-rich in others. Far fewer benefit incidence studies are reported from social insurance-dominated countries, largely because the incidence of government tax spending is harder to interpret in them.

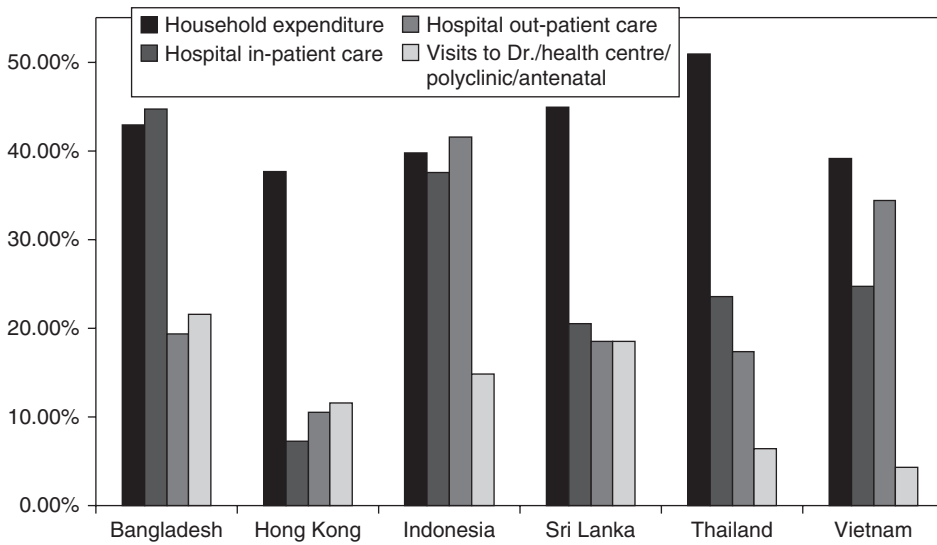
More recently, the Equitap Study has provided comparative benefit incidence results for eight Asian countries, which are summarized in Figures 19.1 and 19.2 (O'Donnell et al., 2003). In general, these results largely reflect the pattern of public sector utilization in countries, and confirm findings from earlier studies of pro-rich inequalities in most countries. In Hong Kong and Sri Lanka, where the distribution of public sector in-patient care is progressive, the distribution of public subsidies for in-patient care is pro-poor.

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Source: Equitap Study results (forthcoming)

Figure 19.1 *Poorest quintiles' shares of public health subsidy by category of care*



Source: Equitap Study results (forthcoming)

Figure 19.2 *Richest quintiles' shares of public health subsidy by category of care*

In Indonesia where the use of government health care services is concentrated among the rich, the distribution of public sector health subsidies is regressive. It is interesting to note that Hong Kong, Malaysia and Sri Lanka, which are found to have most progressive distribution of public health subsidies, are unusual within Asia as being the three countries that are most committed to the practice of providing health services free on a universal basis, without explicit targeting of the poor. Their positive experience may be linked to their commitment to universality, and provides some justification for their reliance on indirect means to voluntarily shift richer patients to the private sector through the use of consumer quality differentials.

*Vertical equity and progressivity in health care financing*

Empirical measurement of the progressivity of health care financing mechanisms in Asia has only received significant attention in the past decade. The existence of multiple financing mechanisms, the substantive role of direct payments in most low- and middle-income countries, and lack of accurate data on the share of financing of each mechanism render the task of assessing the overall progressivity of Asian health care systems more challenging than in Europe. In Europe and most OECD countries, more than 80 per cent of financing is either from public sources or organized private sources, for which administrative data are readily available. Direct payments typically account for less than 10 per cent of total funding, in contrast to much of Asia where it ranges from 20–80 per cent of total funding. Since there is considerable uncertainty over the actual share of direct payments in total financing in many countries (for example, estimates of private, mostly household, expenditure in India range from 2 per cent to 4 per cent of GDP), estimates of the overall progressivity of financing systems are highly susceptible to the assumptions made about the relative shares of each source.

The Equitap study attempted to deal with this in its comparative analysis by using wherever possible national health accounts-type data to fix the relative shares. Its estimates of the progressivity indices for 13 countries in Asia are summarized in Table 19.4 (O'Donnell et al., 2004). In high-income Japan, Korea and Taiwan, where health care is primarily financed through social insurance, the rich pay more in absolute terms but less as a proportion of incomes. On the other hand, in Hong Kong where public funding is from general revenue taxation, overall system financing is progressive. This result confirms earlier findings in Europe about the greater progressivity of general revenue financing relative to social insurance. Direct, and to a lesser extent, indirect taxes tend to be strongly progressive compared to social insurance contributions which are levied as a fixed proportion of earnings.

The findings from Europe that out-of-pocket or direct payments represent a regressive financing method hold true only for high-income economies in Asia. In contrast, in low- and middle-income countries in Asia, direct payments absorb a proportionately larger share of rich households' resources. In low-income settings where health insurance coverage is not universal, better-off households pay out-of-pocket for more or better health care, while the poor simply forgo care or seek care in the public sector. So in low- and middle-income Asia, the distribution of direct payments is typically progressive, although to the extent that it reflects greater use of services and greater access to such services by the rich, it does not imply an equitable outcome. In fact, in localities where access

212 *The Elgar companion to health economics*Table 19.4 *Kakwani progressivity indices: country and source*

|                           | Direct taxes | Indirect taxes | Social insurance | Private insurance | Direct payments | Total financing |
|---------------------------|--------------|----------------|------------------|-------------------|-----------------|-----------------|
| Bangladesh (1999/2000)    | 0.552        | 0.111          | NA               | NA                | 0.219           | 0.214           |
| China (2000)              | 0.152        | 0.040          | 0.235            | NA                | -0.017          | 0.040           |
| Hong Kong (1999/2000)     | 0.386        | 0.119          | NA               | 0.040             | 0.011           | 0.166           |
| Indonesia (2001)          | 0.196        | 0.074          | 0.306            | (a)               | 0.176           | 0.174           |
| Japan (1998)              | 0.095        | -0.223         | -0.041           | (b)               | -0.269          | -0.069          |
| South Korea (2000)        | 0.268        | 0.038          | -0.163           | NA                | 0.012           | -0.024          |
| Kyrgyz Republic (2000)    | 0.074        | -0.096         | -0.034           | NA                | 0.264           | 0.125           |
| Nepal (1995/96)           | 0.144        | 0.114          | NA               | NA                | 0.053           | 0.063           |
| Philippines (1999)        | 0.381        | 0.002          | 0.205            | 0.120             | 0.139           | 0.163           |
| Punjab, India (1999/2000) | NA           | 0.058          | NA               | (a)               | 0.046           | 0.049           |
| Sri Lanka (1996/97)       | 0.569        | -0.010         | NA               | (a)               | 0.069           | 0.085           |
| Taiwan (2000)             | 0.244        | 0.040          | -0.075           | 0.205             | -0.078          | -0.029          |
| Thailand (2000)           | 0.510        | 0.182          | 0.180            | 0.004             | 0.091           | 0.197           |

*Notes:*

(a) Allocated as direct out-of-pocket payments

(b) No data

*Source:* Equitap Study results (forthcoming)

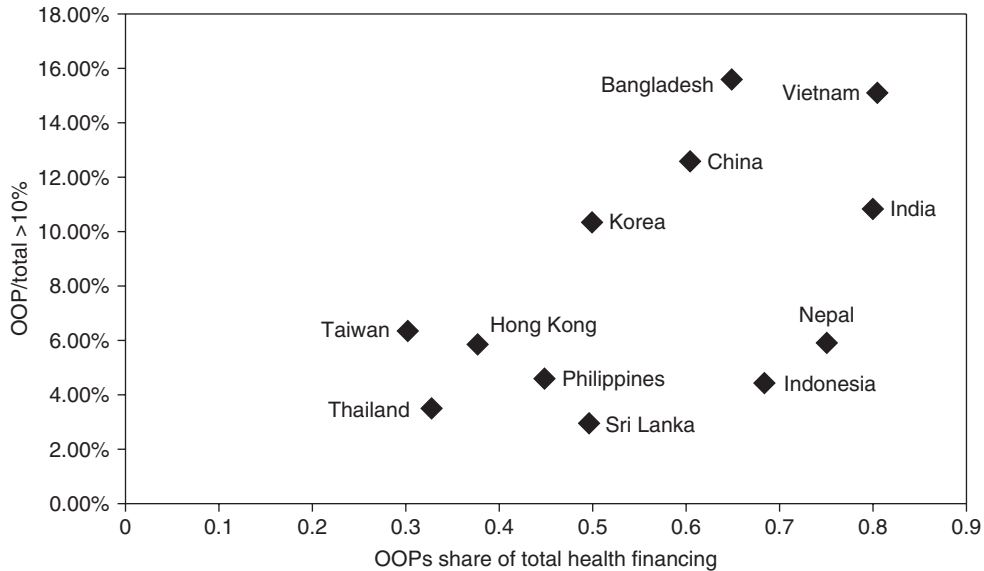
barriers are minimal, such as urban Thailand (Pannarunthai and Mills, 1997), studies have reported a regressive pattern of payments.

*Catastrophic and poverty impact of health care expenditures*

The failure of health systems in developing countries, and in Asia particularly, to protect individuals against the catastrophic economic impacts of illness has received increasing attention in the policy and research literature in the past decade (Pradhan and Prescott, 2002; Xu et al., 2003). However, as noted by Rannan-Eliya and de Mel (1997), this issue was identified, and impacted actual policy in Sri Lanka as early as the late-1930s. This has been driven by the increasing evidence from countries such as China (Yuan and Wang, 1998), Vietnam (Wagstaff and van Doorslaer, 2001) and Bangladesh, that inadequate risk protection by health systems is often a major cause of impoverishment, and was reinforced by the economic crises in the late-1990s, which exacerbated existing deficiencies in health systems, such as Indonesia's (Pradhan and Prescott, 2002). The findings of the Equitap study (van Doorslaer et al., 2005) represent the first major attempt to generate comparative evidence on the catastrophic and poverty impact of direct payments for a large number of Asian countries. These reveal considerable differences between countries, even at the same income level. More importantly, they show a strong positive association between direct payments share in total finance and the risk of financial catastrophe (van Doorslaer et al., 2005; Wagstaff and van Doorslaer, forthcoming), although the correlation is weaker for total consumption than for non-food consumption (Figure 19.3). This points to the critical importance of increasing public financing in many countries to reduce reliance on direct payments.



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Source: Equitap Study results (forthcoming)

*Figure 19.3 Share of households with out of pocket expenses (OOPs) share of total household expenditures > 10 per cent and OOPs share of total health financing*

Interestingly, high levels of direct payments do not necessarily translate into high catastrophic impact for the poor. When defined as a proportion of total expenditures in a given time period, both the incidence and intensity of catastrophic impact are concentrated empirically among the better-off households in almost all countries examined. This finding must be qualified by noting that high expenditure flows for the wealthy may not be as catastrophic for them, given that such households typically have greater access to savings and other mechanisms for smoothing consumption, and their decision to make payments as opposed to using free public care is typically by choice. However, when catastrophe is defined as a share of non-food expenditures, financial catastrophe is no longer concentrated among better-off households. As food shares decline at higher levels of overall consumption, direct payments are a heavier burden on lower income households' non-food consumption. The risk of health care expenditures driving households below the poverty level is significant in countries such as Bangladesh, Nepal and to a lesser extent China and Vietnam, where a large proportion of households have living standards close to subsistence level.

*Similarities and differences to European work*

Much of the current established knowledge on the determinants of health systems equity is derived from the extensive work conducted by research collaborations in Europe in the past two decades (Wagstaff and van Doorslaer, 2000). The recent empirical work in Asia, in countries with a far greater diversity of income levels, has validated the broad

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conclusions of this work with respect to the relative benefit of taxation and social insurance for progressivity of financing (Table 19.4). In Asia, as in Europe, health care financing in the social insurance countries (Japan, Korea, Taiwan) is regressive, whilst in the predominantly tax-financed countries (Thailand, Hong Kong, Kyrgyzstan, Sri Lanka), it is typically proportional or mildly progressive. In Asia, direct taxation is generally progressive; however, unlike in Europe, in the middle- and low-income economies of Asia indirect taxation is typically progressive also.

The major difference between Asia and Europe lies in the impact of private financing on progressivity. In middle- and low-income Asia, direct payments are found to be progressive, and the privately-financed systems in Asia (Nepal, India, Indonesia) are not found to be regressive, and in fact are mildly progressive. This contrast is explained by a distinct difference between European and most Asian systems (exceptions are Japan, Korea, Taiwan). In most of developing Asia, health care provision is generally by separately-funded and uncoordinated public and private sectors, with most of the population entitled in theory to subsidized public care, but also entitled to opt for private services. Most direct payments are associated with use of private services, and use of these is voluntary. The wealthier can better afford higher quality private care, and choose to pay for it or for higher volumes of service, thus giving direct payments a mostly progressive profile.

### **3. A typology of health systems according to financing and delivery/equity performance**

The diversity of findings for equity in Asian health systems should not surprise. The region contains the widest diversity of types of economic and social systems, and levels of economic development. If anything, the differences with Europe, and the variations within Asia, suggest that it is Europe that is the global exception in its relative homogeneity. However, within this diversity, it is possible now to begin to identify a typology based on distinct national clusters of health system organization and performance with respect to equity.

#### *Social insurance systems with effective universal access*

In these countries (Japan, Korea, Taiwan, Mongolia, Kyrgyz), public sources of financing account for half or more of the total, virtually all citizens are covered by a national social insurance system, access to services is effectively universal, and major variations in equity in financing and delivery are mostly explained by differences in insurance tax schedules and levels of co-payments.

#### *Predominant tax systems with effective universal access*

In these countries (Malaysia, Sri Lanka, Hong Kong, Thailand), public sources of financing account for half or more of the total, virtually all citizens are eligible to use subsidized public services, actual access to services is effectively universal, and relative rates of use of medical services are high. In general, variations in equity of financing and delivery are mostly explained by specific details of tax schedules, and the extent to which wealthier individuals opt out of public provision to obtain additional levels of care from private provision. In practice, public in-patient services are relatively equally and preferentially utilized by all income levels, except the top decile, whilst public out-patient service use shows a negative income gradient, with private use increasing conversely. In these

countries, government health spending is pro-poor in its incidence, in a pattern which is consistent with the optimizing implications of the theoretical model of public financing of public goods distribution suggested by Besley and Coate (1991).

*Mixed systems involving tax and direct payments, but ineffective universal access*

In these countries (Bangladesh, Indonesia, Nepal, most states in India), direct payments account for more than half of total financing, and although all citizens are nominally eligible to use subsidized public services, actual access to services is not universal. This lack of effective and equitable access to public services is driven by a number of factors, including geographical distance from too few fixed facilities, high levels of official and unofficial user charges, and low levels of health awareness and understanding of the benefits of professional medical treatment. Consequently, although financing may be progressive, health care utilization is pro-rich, and government health spending is not pro-poor, particularly in the case of in-patient services. Unofficial user charges in public sector facilities in these countries are a pervasive problem, and a disincentive for use of public facilities by the poor. In most of these cases, the high prevalence of such informal charging reflects not only inadequate public budgets, but also historical traditions of legitimized rent-seeking by public officials (Killingsworth and Thomas, 2003; Ensor and Thompson, chapter 15 in this Companion).

*Transition economies*

The former socialist economies in Asia (China, Vietnam, central Asian republics), excepting Mongolia, represent a special case. They generally had achieved high levels of service access through public financing during the socialist period, but did not maintain predominant public financing during their transition to market economies. In the case of the central Asian republics, the gap in public funding was replaced by a mix of official and unofficial fees in public facilities, and in China and Vietnam by predominant reliance on official fees in public facilities. In these countries, particularly in rural areas of China and Vietnam, financial barriers to medical care for the poor can be substantial, and significant inequities in health care use and health care outcomes have emerged in the past two decades. In China, where rural hospitals are mostly funded from user charges, this has resulted in a high level of non-use of medical services by the poor sick, and high levels of catastrophic impoverishment as a result of medical treatment. Mongolia is a notable exception in that it shifted to a predominantly general-revenue funded social insurance system in the mid-1990s, which appears to have been effective in maintaining equity in access and also protecting its rural population from catastrophic impoverishment as a result of sickness.

#### **4. Questions and future agenda**

The past decade has seen considerable advances in the empirical work on equity in Asian health systems, particularly of a comparative nature in the past five years. We now have a reasonably comprehensive profile of equity in financing and delivery in most major Asian countries, although detailed analyses are still needed in many states and provinces of India and China, the two countries with large subnational variations. Assessment of health care status differentials has been largely limited to Japan, and to child mortality

differences in low- and middle-income Asia. Clearly, extending this work to look at inequity in adult morbidity and mortality is needed, but will require significant methodological and data developments. However, it could be argued that this ought not to be a priority for the immediate future, since we already know that inequalities in health outcomes are likely to exist in the adult population, accompanying the known inequalities in health care use, and better understanding the latter may be more useful.

For most of low- and middle-income Asia, use of medical services is either pro-rich or only approximately equal by income level. So whilst the issue of equity of use in relation to need is important to further improve equity in countries such as Japan, Korea, Taiwan and Hong Kong, it is not of critical importance in the others at the current time.

The issue that is most pronounced in the region is the failure of many health systems to protect the poor against financial catastrophe following illness. This does not appear to be the simple consequence of low incomes, since there are large variations in national performance at the same income level, and some low-income countries are able to protect their populations. Moreover, there are clear differences between countries in the extent to which subsidized public services reach the poor, and this is the main correlate of overall equity in access to services. The findings to date point to the importance of system factors in determining overall outcomes, but also point to the need to better understand the institutional particularities which explain why some countries do well and others do not.

## References

- Alailima, Patricia J. and Faiz Mohideen (1983), 'Health sector commodity requirements and expenditure flows', Unpublished report, Colombo, Sri Lanka: National Planning Department.
- Besley, Timothy and Stephen Coate (1991), 'Public provision of private goods and the redistribution of income', *American Economic Review*, **81**(4), 979–84.
- Bhuiya, Abbas, Mushtaque Chowdhury, Faruque Ahmed and Alayne M. Adams (2001), 'Bangladesh: an intervention study of factors underlying increasing equity in child survival', in T. Evans, M. Whitehead, F. Diderichsen, A. Bhuiya and M. Wirth (eds), *Challenging Inequities in Health*, New York, NY: Oxford University Press.
- Data International (1998), *Bangladesh National Health Accounts 1996/97*, Dhaka, Bangladesh: Health Economics Unit, Ministry of Health and Family Welfare.
- Filmer, Deon and Lant Pritchett (2001), 'Estimating wealth effects without income data or expenditure data – or tears: Educational enrollment in India', *Demography*, **38**(1), 115–32.
- Gao, Jun, Shenglan Tang, Rachel Tolhurst and Keqing Rao (2001), 'Changing access to health services in urban China: implications for equity', *Health Policy and Planning*, **16**(3), 302–12.
- Gao, Jun, Juncheng Qian, Shenglan Tang, Bo Eriksson and Erik Blas (2002), 'Health equity in transition from planned to market economy in China', *Health Policy and Planning*, **17** (Supplement 1), 20–9.
- Gwatkin, Davidson R. (2000), 'Health inequalities and the health of the poor: What do we know?', *Bulletin of the World Health Organization*, **78**, 3–17.
- Gwatkin, Davidson R., Shea Rutstein, Kiersten Johnson, Rohini Pande and Adam Wagstaff (2000), *Socio-economic Differences in Health, Nutrition, and Population*, Washington, DC, USA: World Bank, HPN/Poverty Thematic Group.
- Hasegawa, Toshiko (2001), 'Japan: historical and current dimensions of health and health equity', in T. Evans, M. Whitehead, F. Diderichsen, A. Bhuiya and M. Wirth (eds), *Challenging Inequities in Health*, New York, NY: Oxford University Press.
- Hotchkiss, David R., Jeffrey J. Rous, Keshav Karmacharya and Prem Sangraula (1998), 'Household health expenditures in Nepal: implications for health care financing reform', *Health Policy and Planning*, **13**(4), 371–83.
- Institute of Policy Studies, Sri Lanka (2003), 'Equity in financing and delivery of health services in Bangladesh, Nepal, and Sri Lanka', in A.S. Yazbeck and D.H. Peters (eds), *Health Policy Research in Asia: Guiding Reforms and Building Capacity*, Washington, DC, USA: World Bank.

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- Killingsworth, James R. and Stephen Thomas (2003), 'Responding to unofficial fees through appropriate analytical frameworks', paper presented at International Health Economics Association 4th World Congress, San Francisco, USA.
- Lanjouw, Peter, Menno Pradhan, Fadia Saadah, Haneen Sayed and Robert Sparrow (2001), 'Poverty, education and health in Indonesia: who benefits from public spending', *World Bank Working Paper 2739*.
- Leung, Gabriel M. and Keith Y.K. Tin (forthcoming), 'Equal treatment for equal need in a post-colonial, advanced Chinese mixed medical economy', paper presented at International Health Economics Association World Congress, 10–13 July 2005, Barcelona, Spain.
- Liu, Yuanli, William C. Hsiao and Karen Eggleston (1999), 'Equity in health and health care: the Chinese experience', *Social Science and Medicine*, **49**, 1349–56.
- Liu, Gordon G., Zhongyun Zhao, Renhua Cai, Tetsuji Yamada and Tadashi Yamada (2002), 'Equity in health care access to: assessing the urban health insurance reform in China', *Social Science and Medicine*, **55**, 1779–94.
- Lu, Jui-fen Rachel (forthcoming), 'Horizontal inequity in medical care utilization – further examination of the impact of Taiwan's National Health Insurance program', paper presented at International Health Economics Association World Congress, 10–13 July 2005, Barcelona, Spain.
- Mahal, Ajay, Janmejaya Singh, Farzana Afridi, Vikram Lamba, Anil Gumber and V. Selvaraju (2001), 'Who benefits from public health spending in India', December 10, 2000, New Delhi: National Council of Applied Economic Research.
- Makinen, M., H. Waters, M. Rauch, N. Almagambetova, R. Bitran, L. Gilson, D. McIntyre, S. Pannurothai, A.L. Prieto, G. Ubilla and S. Ram (2000), 'Inequalities in health care use and expenditures: empirical data from eight developing countries and countries in transition', *Bulletin of the World Health Organisation*, **78**(1), 55–65.
- Meegama, A. (1986), 'The mortality transition in Sri Lanka', in *Determinants of Mortality Change and Differentials in Developing Countries: The Five-Country Case Study Project*, New York, USA: United Nations.
- Meerman, Jacob (1979), *Public Expenditure in Malaysia: Who Benefits and Why*, New York, USA: Oxford University Press.
- Mosk, Carl and S. Ryan Johansson (1986), 'Income and mortality: evidence from modern Japan', *Population and Development Review*, **12**(3), 415–40.
- O'Donnell, Owen, Aparnaa Somanathan, Eddy van Doorslaer, Ravi P. Rannan-Eliya, Piya Hanvoravongchai, Mohammed Nazmul Huq, Gabriel M. Leung, Keith Tin and Chitpranee Visasvid (2003), 'The distribution of benefits from public health care in some Asian countries', Equitap Working Paper Number 3, Colombo, Sri Lanka.
- O'Donnell, Owen, Eddy van Doorslaer, Ravi P. Rannan-Eliya, Aparnaa Somanathan, Shiva Raj Adhikari, Baktygul Akkazyeva, Deni Harbianto, Shamsia Ibragimova, Charu C. Garg, Piya Hanvoravongchai, Alejandro N. Herrin, Mohammed N. Huq, Anup Karan, Soon-man Kwon, Gabriel M. Leung, Jui-fen Rachel Lu, Yasushi Ohkusa, Badri Pande, Rachel Racelis, Keith Tin, Laksono Trisnantoro, Chitpranee Vasavid, Quan Wan, Bong-Min Yang and Yuxin Zhao (2004), *Who pays for health care in Asia?*, Equitap Working Paper Number 1, July, Colombo, Sri Lanka: Equitap Project.
- Pannarunthai, Supasit and Anne Mills (1997), 'The poor pay more: health relative inequality in Thailand', *Social Science and Medicine*, **44**(12), 1781–90.
- Pradhan, Menno and Nicholas Prescott (2002), 'Social risk management options for medical care in Indonesia', *Health Economics*, **11**, 431–46.
- Rannan-Eliya, Ravi P. and Nishan de Mel (1997), *Resource Mobilization for the Health Sector in Sri Lanka*, Data for Decision Making Publication, Boston, MA, USA: Harvard School of Public Health.
- Rannan-Eliya, Ravi P. and Aparnaa Somanathan (1999), 'Estimates of domestic health expenditures 1989/90 to 1996/97', Special Report No. 1 (Harvard Health Care Financing Study Report), Hong Kong SAR: Health and Welfare Bureau.
- Sen, Amartya (2002), 'Health: perception versus observation', *British Medical Journal*, **324**(7342), 860–1.
- Somanathan, Aparnaa and Ravi P. Rannan-Eliya (2005), 'Who uses health care in Asia?', Equitap Working Paper Number 3, Colombo, Sri Lanka: Equitap Project.
- Tandon, Ajay, Christopher Murray and J.A. Salomon (2001), 'Statistical methods for enhancing cross-population comparability', GPE Discussion Paper Series, Geneva, Switzerland: World Health Organization.
- van Doorslaer, Eddy, Owen O'Donnell, Aparnaa Somanathan, Ravi P. Rannan-Eliya, Charu C. Garg, Piya Hanvoravongchai, Alejandro N. Herrin, Mohammed Nazmul Huq, Gabriel M. Leung, Jui-fen Rachel Lu, Badri Pande, Rachel Racelis, Sihai Tao, Keith Tin, Chitpranee Visasvid, Bong-Min Yang and Yuxin Zhao (2005), 'Paying for health care in Asia: Catastrophic and poverty impact', Equitap Working Paper Number 2, Colombo, Sri Lanka: Equitap Project.
- Wagstaff, Adam and Eddy Van Doorslaer (1991), 'On the measurement of horizontal inequity in the delivery of health care', *Journal of Health Economics*, **10**(2), 169–205.

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- Wagstaff, Adam and Eddy van Doorslaer (2000), 'Equity in health care finance and delivery', in A.J. Culyer and J.P. Newhouse (eds), *Handbook of Health Economics*, Amsterdam, Netherlands: Elsevier Science BV.
- Wagstaff, Adam and Eddy van Doorslaer (2001), 'Paying for health care quantifying fairness, catastrophe, and impoverishment, with applications to Vietnam, 1993–1998', Working Paper Series Number 2715, Washington, DC, USA: World Bank.
- Wagstaff, Adam and Eddy van Doorslaer (forthcoming), 'Catastrophe and impoverishment in paying for health care: with applications to Vietnam 1993–1998', *Health Economics*.
- Xu, Ke, D.B. Evans, Kei Kawabata, R. Zeramdini, Jan Klavus and Christopher J.L. Murray (2003), 'Household catastrophic health expenditure: a multicountry analysis', *The Lancet*, **362**, 111–17.
- Yang, Bong-min and Soonman Kwon (forthcoming), 'Horizontal equity in health care utilization in South Korea', paper presented at International Health Economics Association World Congress, 10–13 July 2005, Barcelona, Spain.
- Yuan, C. and Z. Wang (1998), 'Treatment and financial loss of catastrophic diseases among rural farmers', *Medicine and Society*, **3**, 627–30.