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Equity in financing healthcare: impact of universal access to healthcare in Thailand

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Abstract

This paper exploited five different data sets of the national household survey in pre- (years 2000 and 2001) and post- (years 2002 and 2004) universal health care coverage (UC) periods to analyse trends and patterns of the distribution of utilisation and out-of-pocket (OOP) payments for public health care in relation to the distribution of household living standards.

Benefit incidence of public health care spending, in general, has been progressive, in favour of the poor. The pro-poor subsidy was strongest for district health system (DHS) which included outpatient (OP) care provided by sub-district health centres (HC), and OP and inpatient (IP) care by district hospitals (DH). The pro-poor financing during the post-UC period in 2004 has been more pronounced for the public subsidies on OP care (Concentration Index –CI = -0.3326, -0.2921, and –0.1496 for HC, DH, and provincial hospitals -PH). Progressivity in the health care benefit incidence was weaker for IP care provided by PH (CI = -0.1104 and -0.1221 for 2001 and 2004, respectively). However, the Kakwani Index (KI) indicates that the public subsidy at every health care level has reduced inequality in the living standards of household members.

Post-UC, 2004, comparisons of the benefit incidence across three public insurance schemes revealed that the progressivity of OP subsidies for HC and DH were consistent across all schemes. The OP subsidy from PH seemed to be pro-poor only for the Civil Servant Medical Benefit scheme (CSMBS) beneficiaries. The pro-poor subsidy of OP care in PH did not hold true among the UC beneficiaries, either UC exempted (UCE) members who were exempted from copayment or UC Pay (UCP) members who were required to co-pay at point of services, and for Social Security Scheme (SSS) beneficiaries. For those who were in the richest quintile, PH played a dominant role in subsidising IP care for all (CSMBS, UCP and UCE), except for the SSS enrolees. Distribution of the IP subsidy from PH seems to be regressive against the poorest quintile of UCE and UCP beneficiaries.

The incidence of catastrophic health expenditure (defined as OOP payments for health care more than 10% of total household consumption expenditure), reduced from 5.4% in 2000 to 3.3% and 2.8% in 2002 and 2004, respectively for all households and from 4.7% to 3.2% and 2.6% during the same periods for members who previously belonged to the Low Income Scheme (LIC) and Voluntary Health Card Scheme (VHC) (who are currently UC) and UC groups. However, the catastrophe tended to be regressive against the poor households after the UC policy was implemented (CI = 0.0358 in 2000 and 0.2062-0.1712 in 2002-2004). Reduction in catastrophic incidence is a result of UC that provides a comprehensive coverage for ambulatory, admission and other high cost care with a very small nominal fee.

We found that the likelihood of catastrophic incidence increased with size of the households, population living in the rural areas, and an increase in living standards. All other things being equal, catastrophic incidence was less likely to occur in households with increasing number of beneficiaries covered by SSS or CSMBS, and with increasing household members who were non-elderly adults or children, and in the households whose heads had secondary or higher education. Differences in the likelihood of catastrophic incidence across the regional locations of households were not statistically significant.

Based on the national poverty lines in Thailand, number of households that were impoverished as a result of OOP health payments reduced after the UC implementation, from 4.4% in 2000 to 2.5% and 1.8% in 2002-2004 for the whole population, and from 18.3% to 10.3% and 8.0% during the same periods for the poorest quintile. The post-OOP poverty headcounts dropped from 2.1 percentage points during the pre-UC period in 2000 to 0.8 to 0.5 percentage points during the post-UC periods in 2002-2004. Moreover, the post-OOP poverty gap which was normalised to the proportion of poverty lines for the impoverished households reduced slightly from 0.7 percentage points in 2000 to 0.4 and 0.2 percentage points after the UC implementation. The poverty impact of OOP payment on households in LIC/VHC and UC groups followed the same trend, namely, reduction in both propensity and intensity of the impoverishment, as in the all-scheme data in both the whole population and the poorest quintiles.

Three major policy interventions by successive governments contributing to the pro-poor nature of health systems in Thailand are worth mentioning. These are the extension of insurance coverage for formal and informal sectors by targeting the poor; the extensive geographical coverage of health delivery infrastructure, such as HC, DH and PH; and the three year mandatory rural service by all medical, nursing, pharmacist and dental graduates. These contributed to a strong DHS providing a wide range of ambulatory and admission services with an acceptable quality of care, in favour of the poor. Much to be learned from Thai experiences on the DHS role in fostering the pro-poor nature of public subsidies.

The current public funded UC scheme further fosters the existing pro-poor financing systems in Thailand. The financing, extensive geographical coverage of healthcare infrastructure, and quality of care are indispensable successful factors. The challenge now is to further minimise catastrophic expenditure especially among the poor.

1. Introduction

Shifting the balance of health financing from out-of-pocket (OOP) to pre-payment is frequently advocated as the key to both widening access to healthcare and protecting households from the financial risk of medical expenses (World Health Organisation, 2005). After extending health insurance coverage to various population groups over 25 years, the government of Thailand offered coverage to the remaining 30% of the population without cover in 2001 through a tax funded public insurance scheme. This reform offers the opportunity to examine how the extension of insurance coverage can improve access to healthcare and protect households from the risks of catastrophic medical expenditures and impoverishment through these expenditures. This paper presents comparisons of the distribution of health care utilisation and of OOP payments for health care before and after the introduction of Universal Coverage (UC) in Thailand in 2001.

Extension of health insurance coverage has been pursued in Thailand since 1975 through a series of piece-meal targeted schemes (Tangcharoensathien, et al., 2005). Government employees and their dependants were the first population group to be covered with the establishment of the Civil Servant Medical Benefit Scheme (CSMBS) in 1978. In 1975, low-income households were covered under the publicly funded Low-Income Card (LIC) scheme. In 1981, a publicly subsidised Voluntary Health Card (VHC) scheme was initiated by the Ministry of Public Health (MOPH) to cover the non-poor informal sector. Later in 1990, the Social Security Scheme (SSS) was legislated to provide mandatory cover for formal sector private employees, initially for firms with more than 20 employees, and later for all firms.

The Thai Rak Thai political Party that came to power in 2001 implemented its election campaign promise of universal health care coverage (UC) in October of that year (Pitayarangsarit, 2004; Tangcharoensathien and Jongudomsuk, 2004). The UC Scheme incorporated the existing schemes for low-income households (LIC) and the informal sector (VHC) and extended coverage to the 30% previously uninsured population. All three groups were covered under a single fund financed by general tax revenue, while CSMBS and SSS still operate their own schemes.

UC beneficiaries have access to free ambulatory care at registered primary-care contractor networks, which is normally a district health system (DHS), consisting of sub-district health centres—(HC) and district hospitals (DH), with a nominal payment, 30 Baht, equivalent to US$ 0.7 per visit (with exemption for previous LIC holders) (Tangcharoensathien and Jongudomsuk, 2004; Towse et al., 2004). UC members are entitled to free hospital

admissions, with hospitals paid from global budgets based on Diagnostic-Related Groups (DRG).

Beneficiaries under CSMBS have access to free ambulatory and admission services, with free choice of providers that are paid by Fee-For-Service (FFS).

SSS beneficiaries are also entitled to free ambulatory and admission services but only at registered hospitals that are paid by capitation. All three public schemes are financed from public resources.

In this paper we examine the distribution of health care utilisation and of OOP payments before and after the introduction of UC. We describe the distribution of publicly financed health services in relation to household living standards. We distinguish between three levels of care: outpatient care at HC, outpatient and inpatient care at DH and PH. We examine OOP payments that can be considered catastrophic, in the sense that they absorb a large share of household resources, and also those payments that impoverish by pushing individuals (further) below the poverty line (Wagstaff and van Doorslaer, 2003; van Doorslaer et al., 2005). Comparing the incidence of catastrophic payments and impoverishment from payments before and after UC gives some indication of the extent to which the extension of coverage has improved risk protection. For the post-UC period, we compare the incidence of public healthcare and of catastrophic and impoverishing payments across public health insurance schemes.

This study is one of the EQUITAP project publication series, and we refer to a standardised methodology for benefit incidence analysis (O'Donnell et al., 2005) and the measurement of catastrophic and poverty impact (van Doorslaer et al., 2005). A detailed data source is briefly described for each major result.

2. Results

2.1 Health care utilisation and public subsidy: benefit incidence analysis

An analysis of utilisation and subsidy of health care in public sectors was performed at the individual person-level using the national representative household survey during pre- and post-UC periods. The data sets were obtained from the National Statistical Office (NSO)'s Health and Welfare Survey (HWS) conducted in April 2001 (N=222,248 individuals) and April 2004 (N=68,109). The interviewing data were recorded for each household member on their

recall of health care utilisation and expenditure. These included ambulatory visits for the last month and hospital admissions for the last year, and OOP payment made to various health care levels. Hence, benefit incidence of the utilisation and public subsidy on health care could be compared between the periods before and after an implementation of the UC policy. However, the HWS 2001 did not collect data on the frequency of ambulatory visits and on the corresponding OOP payment. Therefore, the utilisation of and public subsidy to OP care was analysed only for the post-UC period in 2004. Features of the national household surveys are presented in Table 1.

<Table 1>

The benefit incidence analysis (BIA) was performed for the whole population in the data sets to compare pre- and post-UC utilisation and subsidy. Household weights obtained directly from these national representative samples were used in all analyses to generalise the results to the nationwide population.

To compare across health insurance schemes, BIA was performed separately for population subsets according to major public schemes. Our focus is on the population covered by the UC to compare with the beneficiaries of CSMBS and SSS. The UC beneficiaries can be divided into 2 subgroups: (1) UC Exempted --UCE who were previously LIC holders, hence, got an exemption from 30 Baht co-payment and (2) UC Pay --UCP who were enrolled in the Voluntary Health Card (VHC) scheme and also the uninsured population. UCP are required to make a nominal co-payment of 30 Baht upon an ambulatory visit or a hospital admission.

The distribution of health care utilisation and health care cost, net of OOP payments in public facilities (i.e., public subsidy), was compared against the distribution of the number of the population with respect to household living standards. In HWS 2001, households were asked for their members' income using 15 income brackets, of which less than 750 Baht and over 20,000 Baht per month were the lowest and highest income brackets, respectively. In HWS 2004, the data were recorded using continuous variables with the ceiling values of 99,997 Baht for in-cash and 9,997 Baht for in-kind incomes (40 Thai Baht = US$ 1). The average household income per capita was used to represent the living standard of individual household members.

Table 2 presents the percentage of individual household members in post-UC (2004) period by quintiles of average income for each insurance scheme. Notably, the distribution of UC beneficiaries was concentrated towards the poor. Whereas 19% and 31% of the UCP and UCE beneficiaries belonged to the poorest quintiles, only 2% and 10% belonged to the

poorest among SSS and CSMBS beneficiaries, respectively. This reflects the pro-poor nature of UC entitlement in those who were previous LIC holders.

<Table 2>

We used the concentration index (CI) to summarise the distributions of utilisation and the subsidy of in relation to income (Wagstaff, et al. 1991; O'Donnell et al. 2005). A negative (positive) CI indicates a pro-poor (pro-rich) distribution. The Kakwani index, defined as the difference between the CI and the Gini index of income inequality, was used to identify if such a subsidy was inequality reducing (Kakwani 1977; O'Donnell et al, 2005). A negative (positive) Kakwani index indicates inequality reduction (increase). Both indices were computed from convenient regressions (Kakwani, et al. 1997).

Distribution of living standards based on the average income per capita for the pre-UC and post-UC periods are presented in Table 3. Unsurprisingly, the living standards in both periods were consistently concentrated among the rich household members, as compared with the poor (CI=0.5048 for 2001 and 0.5162 for 2004). These pro-rich living standards occurred in all four public schemes of health insurance, but more concentration was observed among CSMBS and SSS than UCP and UCE.

<Table 3>

To transform the utilisation data into the value of public subsidy, the unit subsidy for OP and IP care referring to unit costs was applied in the estimation capitation rates for 2000-2007 (Patcharanarumol et al., 2005). The unit costs varied by years, types of health care services (OP and IP) and levels of care (HC, DH and PH). For example, in 2004 unit costs were 75, 308, and 439 Baht for OP care at HC, DH and PH respectively. Concurrently, unit costs were 4,962 and 8,354 Baht for IP care at DH and PH respectively.

Due to data limitations, these unit costs were applied throughout the country, without geographical variations. Any negative values of the subsidy (i.e., reported OOP paid by household higher than the total cost) were replaced with zero value. The reference periods for recall of the utilisation of OP care (one month) were shorter than that of IP care (12 months). We calculated the subsidy separately for each type of service and for each level of health care facility.

2.1.1 Pre- and post-UC trend

It should be noted that the pre-post-UC comparison of health care utilisation and public subsidy was performed for IP care only, while OP can be produced only for post-UC, due to data limitations, as previously described.

Post-UC 2004, OP utilisation and public subsidy was progressive in favour of the poor, with respect to household living standards (Table 4). In terms of the magnitudes of progressivity by level of care, HC demonstrates the best pro-poor nature, with the largest CI and KI (CI = -0.3326 and KI = -0.8787). The pro-poor subsidies at DH (CI = -0.2921 and KI = -0.8367) were relatively larger than at PH level (CI = -0.1496 and KI = -0.6888). Note that the pro-poor nature of OP public subsidy was stronger than OP utilisation in all three levels of OP care.

<Table 4>

Pre-post-UC progressivity of IP use and subsidy is presented in Table 5. In general, both utilisation and subsidy for IP care at DH were progressive, in favour of the poor for both pre- and post-UC periods. The magnitude of the pro-poor IP utilisation and subsidy at DH (CI = -0.2589 to -0.3041 for utilisation and -0.2666 to -0.3130 for subsidy) was stronger than at PH level (CI = -0.0729 to -0.1149 and -0.1104 to -0.1221, respectively). The post UC pro-poor nature of utilisation and subsidy at PH was slightly better than pre-UC. In addition, the pro-poor nature of IP subsidy at DH was consistent with the findings for OP subsidy. The Kakwani Index indicated a reduction in inequality in both utilisation and public subsidy of IP care for both DH and PH in all periods of observation.

<Table 5>

2.1.2 Post-UC comparison across health insurance schemes

A post-UC BIA comparison for OP across schemes is presented in Figures 1A and 1B using HWS 2004 data. Panel A reflects the poorest, and panel B the richest quintiles. Comparing against the population distribution (the leftmost bars) in each quintile, the OP subsidies for services provided by HC (the second left bars) and DH (the third left bars) were progressive toward the poor for all four insurance schemes. For the poorest UCE members, the OP subsidy share in DHS (39.9% for HC and 39.0% for DH) was much greater than the population share (30.8%). The share in OP subsidy of the DHS for the poorest UCP (22.7% for HC and 24.2% for DH) was larger than the share in the population (19.4%). The opposite trend was observed in the richest quintile of UC beneficiaries, where DHS subsidy share (UCE: 2.4 and 1.8% and UCP: 3.7 and 6.2% for HC and DH, respectively) was less than the population share (UCE 6.2% and UCP 13.4%). The OP subsidy at PH (the rightmost bars)

seemed to be pro-poor only for the CSMBS beneficiaries, unitary for UCE, and slight pro-poor for UCP.

<Figure 1A>

<Figure 1B>

A post-UC BIA comparison for IP across schemes is presented in Figures 2A and 2B using HWS 2004 data. The 10.2% poorest members of CSMBS were subsidised progressively and equally when they used IP services at DH (20.1%) and PH (19.5%), whereas the 30.8% poorest UCE beneficiaries were for services at DH (38.0%). The 19.4% poorest UCP received an IP subsidy marginally progressive from DH (21.0%), at a lower extent than UCE. Distribution of the IP subsidy from PH is unitary for the poorest UCE (30.2%) and regressive, not favouring the poorest for UCP beneficiaries (15.9%).

<Figure 2A>

<Figure 2B>

2.2 Catastrophic health expenditure and impoverishment

Unit of analysis of catastrophe and impoverishment as a result of OOP payment for health care was at household level. Data were obtained from the NSO Socio-Economic Survey (SES) conducted every other year in 2000 (N=24,747 households), 2002 (N=34,785), and 2004 (N=34,843). Records of household consumption over 12 monthly periods were comprehensive in all expenditure items, hence, catastrophic health expenditure and the poverty impacts could be analysed for the trend between pre-UC (2000) and post-UC (2002, 2004) periods. For comparison across health insurance schemes, data for 2000 were available for LIC/VHC schemes only and for 2002-2004 for all major public schemes. In view of this data limitation, comparison across schemes was only done for post-UC periods (2002 and 2004).

Household living standards were measured by the per capita household consumption expenditure, including that from household production, in the month prior to the interviewing date.

Table 6 presents the percentage distribution of households against quintiles of all-household consumption expenditures for each insurance scheme during post-UC periods in 2002 and

2004. Notably, distribution of the number of households for the UC scheme was more concentrated towards the poor (26.3-26.4% of UC beneficiaries belonged to the poorest quintile of all population) relative to other public schemes (0.6-0.9% and 3.9-4.9% were the poorest SSS and CSMBS, respectively). There is almost no change in distributions in 2002 and 2004.

<Table 6>

For all three periods, the living standard as defined by total consumption expenditure per capita was consistently concentrated among the rich households as compared with the poor (CI=0.3664, 0.3676, and 0.3767 for 2000, 2002, and 2004, respectively) (Table 7). This pro-rich living standard of households was found in all public health insurance schemes even after the UC implementation. Note that there is almost no change in distributions of living standards in the three periods of observation.

<Table 7>

Variations in catastrophic health expenditure and household impoverishment as a result of OOP payments for health care were analysed for pre-UC (2000) and post-UC (2002 and 2004) periods. The catastrophic threshold was defined as household OOP payments for health care above 10% of the total consumption including food and non-food expenditures. OOP payments reported in SES included comprehensive ranges of expenditure on medicines, medical supplies, diagnostics, medical services for OP visits and IP admissions.

For identifying impoverishment due to health spending, we applied the latest version of the national poverty lines of Thailand which were reported annually until 2002 (TDRI, 2004). The poverty lines varied by years and by geographic regions and sub-categorised by urban-rural areas. For example, in 2002 the poverty line was 1,009 and 1,801 Baht for the rural Northeast and (urban) Bangkok, respectively. The poverty lines for each region in 2004 were extrapolated using a linear trend of 2000-2002 poverty line. Regional- and urban-rural specific poverty lines were applied to individual households in the SES data.

4.2.1 Pre- and post-UC trend

A. *Catastrophic impact*

The distribution of the number of households with catastrophic health expenditure across quintiles of living standards in all households for years 2000, 2002, and 2004 is illustrated in Figure 3. The total households facing catastrophic expenditure in 2000, were fairly evenly distributed across the five quintiles, 15% in Q1, 25% in Q2, and almost equally at 20% in Q3 to Q5. After the UC in 2002 and 2004, the percent distribution in Q1 and Q2 significantly reduced, and skewed towards Q4 and Q5 instead.

<Figure 3>

Table 8 demonstrates post UC catastrophic incidence as a percentage of total households in each consumption quintile. The incidence significantly reduced among the poorest quintiles from 4% in 2000 to 1.7% and 1.6% in 2002, 2004. Similarly, the incidence among Q2 also reduced from 6.6% to 2.1% and 2.4% in the three observations. The overall incidence of catastrophic expenditure consistently reduced from 5.4% in pre-UC 2000, to 3.3% and 2.8% in post-UC 2002 and 2004 respectively. The UC had a major impact in preventing catastrophic expenditure on health care.

<Table 8>

B. *Poverty impact*

The pre-OOP regional-rural-urban specific poverty was estimated at 2.3, 1.7, and 1.3% of the whole country in 2000, 2002, and 2004, respectively. The overall poverty outshoot as a result of OOP on health decreased, from 4.4% in pre-UC 2000 to 2.5 and 1.8% in post-UC 2002, and 2004 periods (Table 9). However, the first quintile is hard hit by impoverishment though a decreasing trend, from 18.3% to 10.3% and 8.0% over the same periods. The poverty outshoot in the poorest quintile reduced from 18.3% in 2000 to 10.3-8.0% in 2002-2004.

<Table 9>

In Table 10, overall changes in the poverty impact of OOP health payments in terms of (absolute difference between post-OOP and pre-OOP) percentage counts of the impoverished households dropped from 2.1 percentage points in pre-UC 2000 to 0.8-0.5 percentage points

in post-UC 2002-2004. The poorest quintiles had a significant reduction in the increase in number of households with post-OOP poverty outshoot, from 6.7 percentage points in pre-UC to 2.0-1.6 percentage points in post-UC periods. Impact on change in the poverty outshoot of UC policy in the two richer quintiles (Q4 and Q5) was insignificant.

<Table 10>

Impoverishment measured in terms of headcounts, and poverty gaps in the impoverished households was further examined. The poverty gap was defined as the mean difference between monthly amounts of household consumption and the national poverty lines which was normalised to a proportion (%) of the whole-country poverty lines. Table 11 presents intensity of the poverty impact of OOP on healthcare. On average, increases in the poverty gaps as a result of OOP on health reduced slightly from 0.7 percentage points in pre-UC 2000 to 0.4-0.2 percentage points in post-UC 2002-2004. Similarly, a significant reduction in the changes in poverty gaps was observed in the poorest quintile (from 1.4 percentage points to 0.4-0.3 percentage points over the same periods).

In conclusion, the UC has had a major impact on reducing overall catastrophic incidence and hence reductions in poverty outshoot and minimising poverty gap. Preventing catastrophic expenditure has spilled over to all quintiles, but reducing poverty outshoot had a major positive impact on the poorer quintiles.

<Table 11>

4.2.2 Post-UC comparison across health insurance schemes

A. *Catastrophic impact*

Figures 4A and 4B illustrates post-UC 2002 and 2004 incidence of catastrophic expenditures by insurance schemes; panel A for the poorest and B for the richest quintiles.

Comparing CSMBS beneficiaries, the catastrophic payment for health care of UC beneficiaries was concentrated more among the richest quintiles.

<Figure 4A>

<Figure 4B>

Table 8 also provides post-UC comparison across insurance schemes. There was a decreasing trend of catastrophic incidence in LIC/VHC and UC, from 4.7% in 2000 to 3.2% and 2.6% in 2002 and 2004 respectively. This effect also spreads to all quintiles of UC members. The incidence among the richest quintiles UC members was higher than the group average (6.1% and 5.2% in 2002 and 2004).

A post-UC logistic regression analysis of SES 2002 and 2004 data was conducted to assess the determinants of the catastrophic health expenditure at household levels. This is presented in Table 12.

<Table 12>

For the post-UC periods 2002-2004, we found that the likelihood of catastrophic incidence increased with size of the households (odds ratio –OR = 1.107 to 1.029), living in rural areas (OR = 1.196 to 1.266), an increase in the household living standards in terms of total consumption expenditures. All other things being equal, the catastrophic incidence was less likely to occur in the households with increasing number of beneficiaries of SSS (OR = 0.989 to 0.988) and CSMBS (0.996 to 1.000), and with increasing household members who were non-elderly adults and children (OR = 0.985 to 0.989 and 0.980 to 0.982), and in the households whose the heads had secondary and higher education (OR = 0.577 to 0.329 and 0.493 to 0.357). Differences in the likelihood of catastrophic incidence across the regional locations of households were not statistically significant.

B. *Poverty impact*

When OOP expenditure is accounted for, some households move from above to below the poverty line. Increases in the poverty headcounts as a result of OOP on healthcare in post UC 2002 and 2004 were concentrated in the poorest quintile of CSMBS and UC groups (Table 10). However, such an increase in the incidence of impoverished households for the poorest quintile reduced from 5.9 percentage points in pre-UC 2000 (among the previous LIC/VHC but now UC members) to 1.9% to 1.5 percentage points in post-UC 2002-2004.

Changes in the poverty gaps due to OOP on healthcare in the impoverished households by insurance schemes followed a similar trend (Table 11). For LIC/VHC and UC groups, an increase in the poverty intensity after OOP payments that was concentrated in the poorest quintile dropped from 1.2 percentage points in 2000 to 0.4 and 0.3 percentage points in post UC 2002 and 2004.

Discussion

By the year 2000, despite twenty-five years of effort to expand health insurance coverage to formal and informal sectors, approximately 30% of the Thai population was still uninsured (Tangcharoensathien, et al., 2005). As a result of coverage extension, simple analyses from the data of SES 1992, 1994, 1996, 1998, 2000 and 2002 indicated a trend of decreasing gaps of inequity in household out-of-pocket spending on health among different income deciles. For example in 1992, the poorest income deciles (D1) spent 8.17% of their income on health, while the richest deciles (D10) spent only 1.27%. The gap reduced in 2002, D1 spent 2.77% of their income on health, while D10 spent 1.71% (see Figure 5). Note also that gap reduction benefited the lower deciles, especially D1 to D4 (Wibulpolprasert, 2001; NSO, 2002).

<Figure 5>

Clearly, UC beneficiaries mostly belong to the poorest and poor quintiles, notably more than half of the UCE members. Adequate use of services by UC members, through better physical and cultural access, better perceived quality of care, and adequate financing of the scheme would potentiate the pro-poor nature of the scheme.

Benefit incidence

The post-UC progressive pattern of OP utilisation and subsidy, in favour of the poor, was demonstrated at the district health systems (including services provided by HC and DH). The Kakwani Index confirmed inequality reduction in both health service utilisation and public subsidy. Unfortunately, no Concentration Index or Kakwani Index for pre-UC is available to demonstrate if UC further fostered pro-poor utilisation and subsidy.

Post-UC progressivity of OP benefit incidence indicated the larger pro-poor nature of services provided by HC than DH, and DH demonstrated better pro-poor impact than PH. The better pro-poor nature of public subsidy for services at DHS than PH was also confirmed by IP care. This confirmed that the DHS is a strategic site for the provision of pro-poor OP and IP services, as being close-to-clients services by DHS are more geographically accessible by the poor. Services at PH are more accessible to urban better-off compatriots.

The pre-post- UC trend of pro-poor IP subsidy was not so obvious as in the case of OP care. The UC Scheme did not potentiate the existing pro-poor nature of IP subsidy. This means, prior to UC, the poor had already better access to IP services. After UC, the better-off UC

members did not increase their uses of IP service, even though they were entitled to do so. However, when faced with very high cost IP care outside the UC systems, the scheme serves as a safety-net for the better-off to avoid catastrophic expenditure.

Post-UC comparison across insurance schemes confirmed the pro-poor nature of OP subsidy at DHS for all schemes; DHS performed better progressivity than PH except for CSMBS beneficiaries. For IP services, DHS performed better progressivity than at PH level. At PH level, IP services are pro-poor for CSMBS, unitary for UCE and slight regressive against the UCP members.

After the inception of the UC scheme, social critiques were made that the general tax funded UC scheme should exclude the rich from the enjoyment of this in-kind benefit. Evidence generated from this study indicates that it was the poor who have enjoyed and benefited more from public subsidy of the scheme than the rich, notably at the DHS for both OP and IP. However, the scheme also serves as a safety-net for the better-off UC members for catastrophic expenditure. One recent study (Vasavid et al., 2004) indicated a higher compliance to IP (80.9% in 2003 and 80.5% in 2004) than OP services (56.6% in 2003 and 53.3% in 2004) entitled to UC members.[1] The IP bill for services outside the UC system is much higher than OP bills, and can be catastrophic. It is rational for UC members to use IP services in UC systems (see Table 13).

<Table 13>

Catastrophic expenditure on health

UC results in a significant reduction in catastrophic incidence from medical bills for the whole population, notably marked effects on the poorest and the poor quintiles. UC demonstrates a marginal positive effect on the richest quintile, who have the highest capacity to pay. UC safeguards the poorest and poor households from heavy and unaffordable health expenditure that might households might fall into debt traps, deplete savings and livelihood, or finally sale of their essential assets.

[1] compliance here refers to UCE and UCP members who use OP or IP services at the designated providers, namely the contractor primary care network.

Though the medical cost for UC members at their designated contractor network is 30 Baht per visit or admission, catastrophic expenditure may occur when members do not use services in the designated providers and choose to pay in full for services elsewhere, especially in private hospitals. In addition, high cost care such as chemotherapy for cancer (that UC does not adequately cover) and dialysis for end stage kidney patients which is not covered by UC can be catastrophic to UC members.

Poverty impact

A major contribution of the UC Scheme is the significant reduction in the impoverishing effects of OOP payments; the overall change in poverty outshoot after OOP payments in the whole population has dropped from 2 percentage points during the pre-UC 2000 to 0.8 and 0.5 percentage points in post-UC 2002 and 2004, one of the major achievements of health financing goals of the country. The poorest quintiles had a significant reduction in the poverty outshoot, from 6.7% in pre-UC 2000 to 2% and 1% in post-UC 2002 and 2004. Reduction in poverty outshoot has had a more positive effect on the poorer than the richer quintiles. Similar findings emerged, with the poverty gap also being reduced as a result of the UC Scheme.

A post-UC logistic regression analysis revealed the likelihood of catastrophic incidence increased with size of the households, those who lived in rural areas, and increased with total consumption expenditures (when households become richer, they pay more of their expenditure on health). With all other things being equal, catastrophic incidence was less likely among households with increasing number of beneficiaries who were covered by SSS and CSMBS, and with increasing household members who were non-elderly adults and children, and with heads having secondary and higher education.

Policy implications

The pre-UC benefit incidence was already progressive in favour of the poor, due to successive government policy interventions, notably:

a) The extension of insurance coverage through general tax-financed schemes such as the LIC scheme and CSMBS, the mandatory payroll tax-financed scheme for SSS, and the voluntary public subsidised scheme (VHC). Successive governments also allocated adequate budget to provide a decent quality of services. A well functioning health system and enabling

factors of access to care through insurance coverage especially for the poor, were synergistic factors resulted in a pro-poor nature during the pre-UC phase.

b) The extension of healthcare infrastructure such as health centres in all sub-districts, staffed by a cadre of paramedics, and district hospitals of 10 to 90 beds in all of more than 700 districts, staffed by a cadre of general physicians, dentists, pharmacists, professional nurses and other paramedics. Extensive geographical coverage of services and a strong DHS were achieved by 1991. The 92 provincial hospitals in 75 provinces served as referral backup for DHS in the localities, staffed by specialists, but slightly better accessed by the non-poor urban populations.

c) The three-year mandatory rural service employment by all medical, nursing, pharmacist and dental graduates was well in place since 1971. The take-up rate for mandatory rural services was almost 100% by all new graduates. This has had a major effect on the comprehensive range of services as well as the quality of care provided by the DHS.

DHS is a major strategic site of health and health systems development in Thailand, endorsed by this study as fostering the pro-poor nature. Developing countries can learn much from Thailand about how pro-poor public subsidy can be achieved.

In order to foster pro-poor financing, policymakers need to strategically allocate adequate resources to levels of health facilities that are better accessed, especially by the poor. In the Thai health system context, DHS is the most crucial strategic hub to perform comprehensive and integrated services covering curative, prevention and promotion services.

Two key messages emerge from this study.

1. The pre- and post-UC concentration index demonstrates progressivity, in favour of the poor. However, the UC Scheme does not potentiate the magnitude of the concentration index. The Kakwani Index also confirmed inequity reduction in all phases.
2. UC has had a significant impact on the reduction of the incidence of catastrophic expenditure, poverty outshoot and intensity of poverty (poverty gap), with a favourable effect on the poorest and poor quintiles.

As renal replacement therapy (RRT) for the End Stage Renal Diseases has been excluded in the benefits package of the UC scheme since the inception of the UC scheme, it is one of the major sources of household OOP among UC members. As is the nature of chronic care, two or three sessions a week are required for hemo-dialysis, and the annual OOP would be as

high as 250,000 Baht for these patients (6,410 USD) (Tangcharoensathien, et al., 2005). OOP for RRT is one of the major causes of catastrophic health expenditure for UC members.

It is recommended that adequate financing of DHS is needed to fostering the pro-poor nature of public subsidies, and a careful extension of RRT to UC members, taking into account the long-term budget impact as well as the potential to terminate chronic dialysis by providing kidney transplantation. This policy is under active analysis and discussion among partners, and IHPP is providing technical evidence (Tangcharoensathien, et al., 2005).

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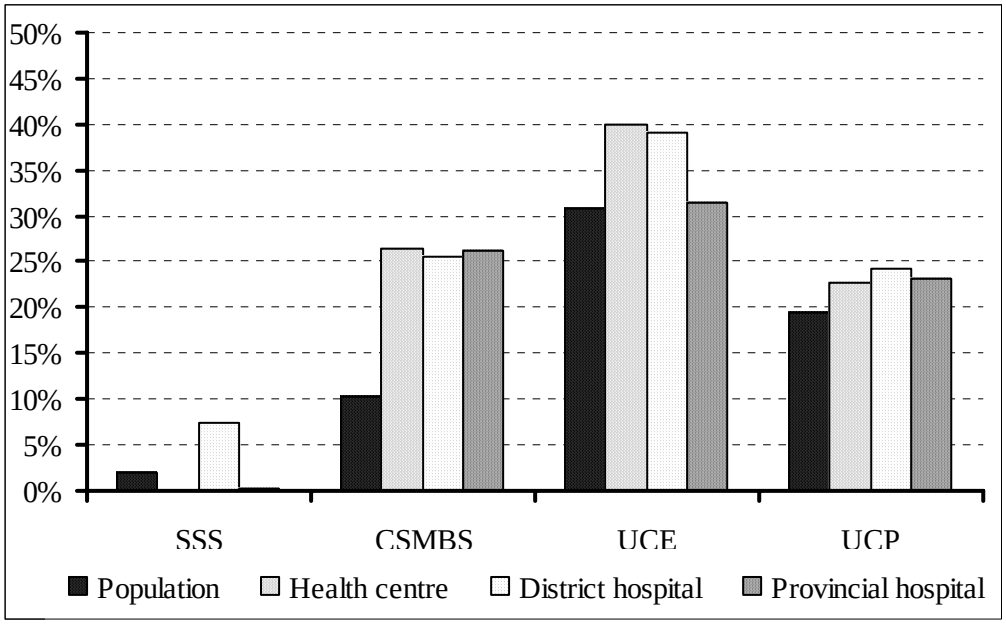
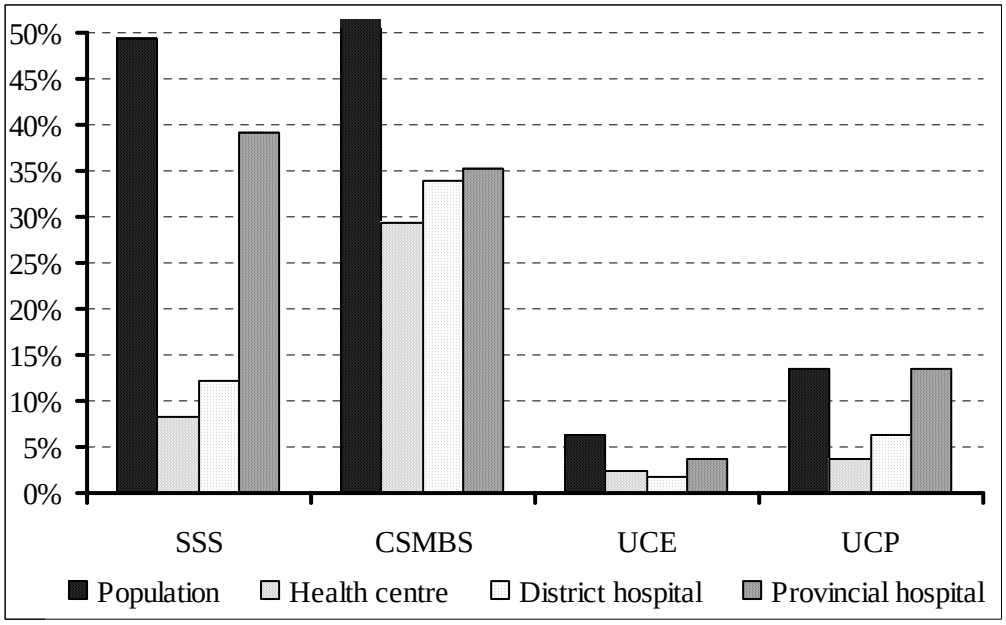
Figure 1A: Public health care subsidy by health insurance schemes –Outpatient care for the poorest quintile, 2004



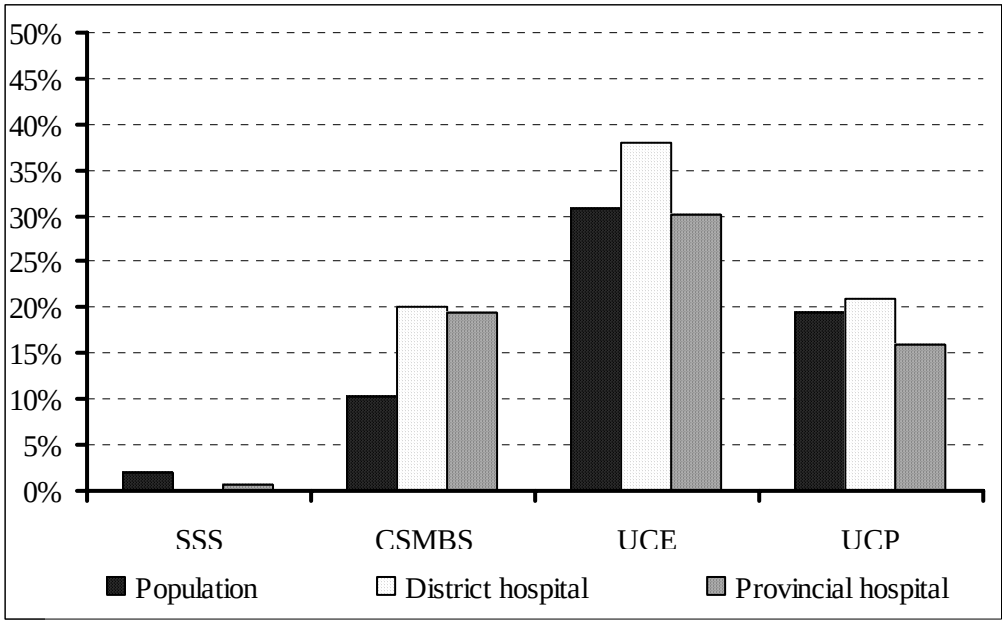
Source: HWS 2004
Note:
SSS –Social Security Scheme, CSMBS –Civil Servant Medical Benefit Scheme, UC –Universal Coverage Scheme (UCE with exempted copayment, UCP with required payment of 30-Baht copay)

Figure 1B: Public health care subsidy by health insurance schemes –Outpatient care for the richest quintile, 2004



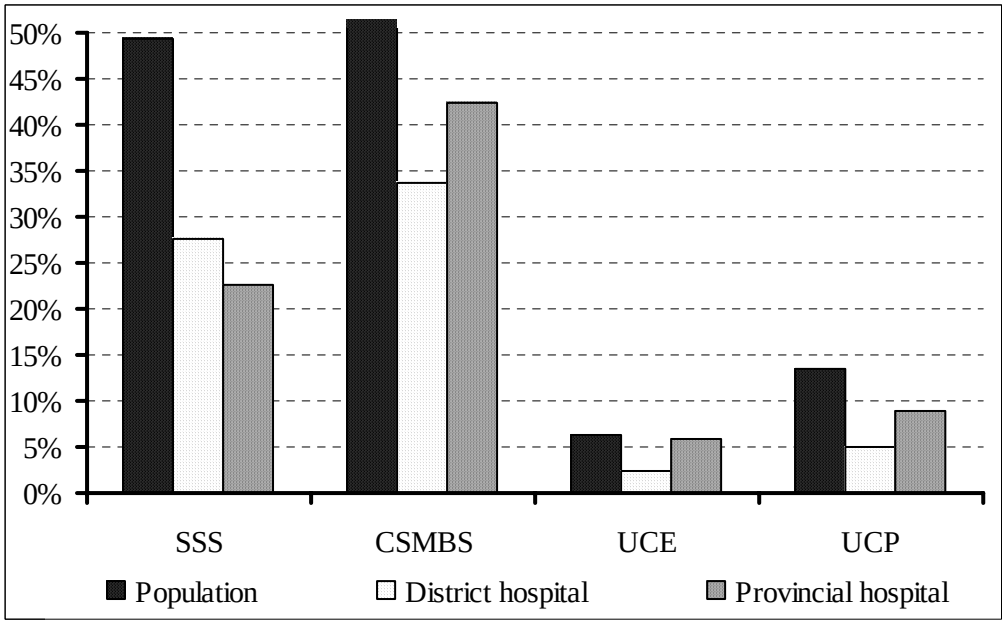
Source: HWS 2004
Note:
SSS –Social Security Scheme, CSMBS –Civil Servant Medical Benefit Scheme, UC –Universal Coverage Scheme (UCE with exempted copayment, UCP with required payment of 30-Baht copay)

Figure 2A: Public health care subsidy by health insurance schemes – Inpatient care for the poorest, 2004



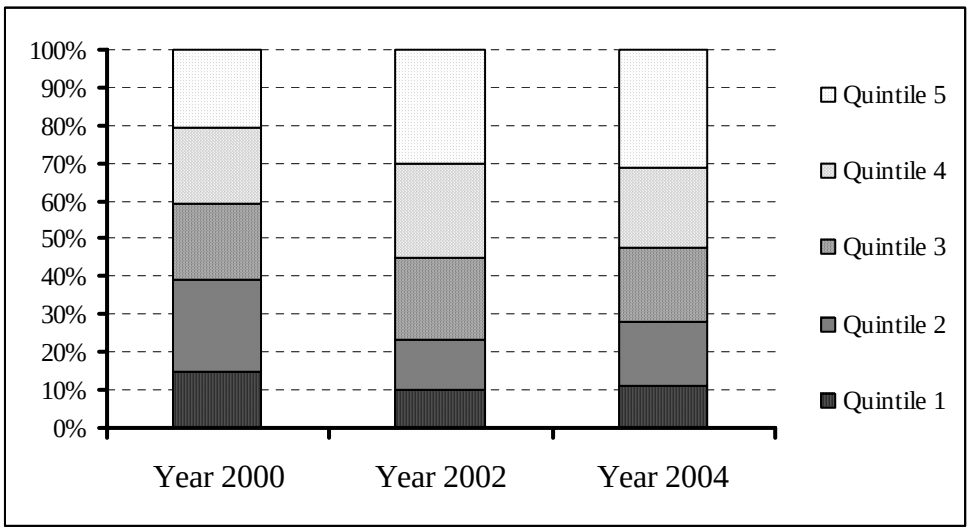
Source: HWS 2004
Note:
SSS –Social Security Scheme, CSMBS –Civil Servant Medical Benefit Scheme, UC –Universal Coverage Scheme (UCE with exempted copayment, UCP with required payment of 30-Baht copay)

Figure 2B: Public health care subsidy by health insurance schemes – Inpatient care for the richest, 2004



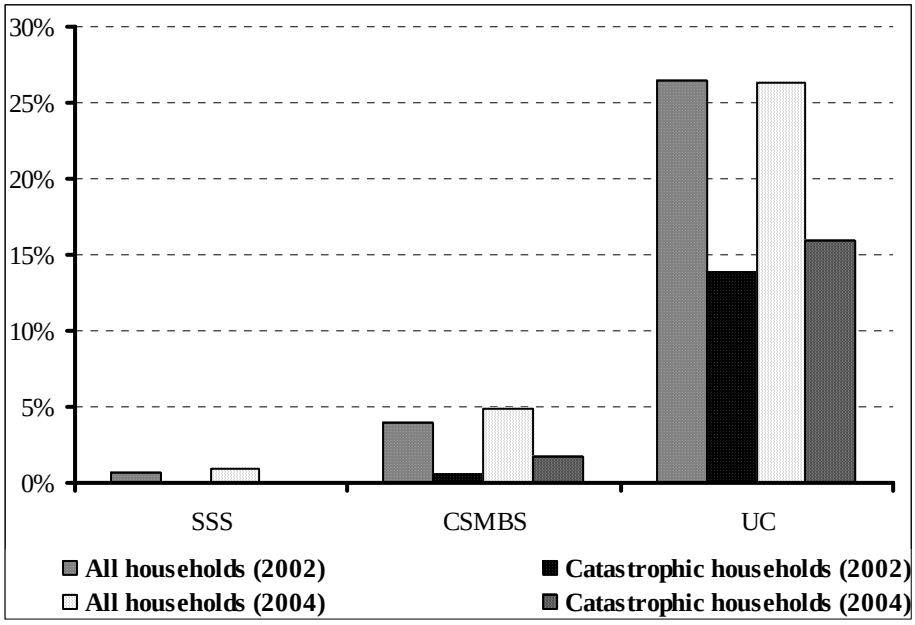
Source: HWS 2004
Note:
SSS –Social Security Scheme, CSMBS –Civil Servant Medical Benefit Scheme, UC –Universal Coverage Scheme (UCE with exempted copayment, UCP with required payment of 30-Baht copay)

Figure 3: Percent distribution of households with catastrophic expenditure [a] by living standard quintiles, 2000 – 2004



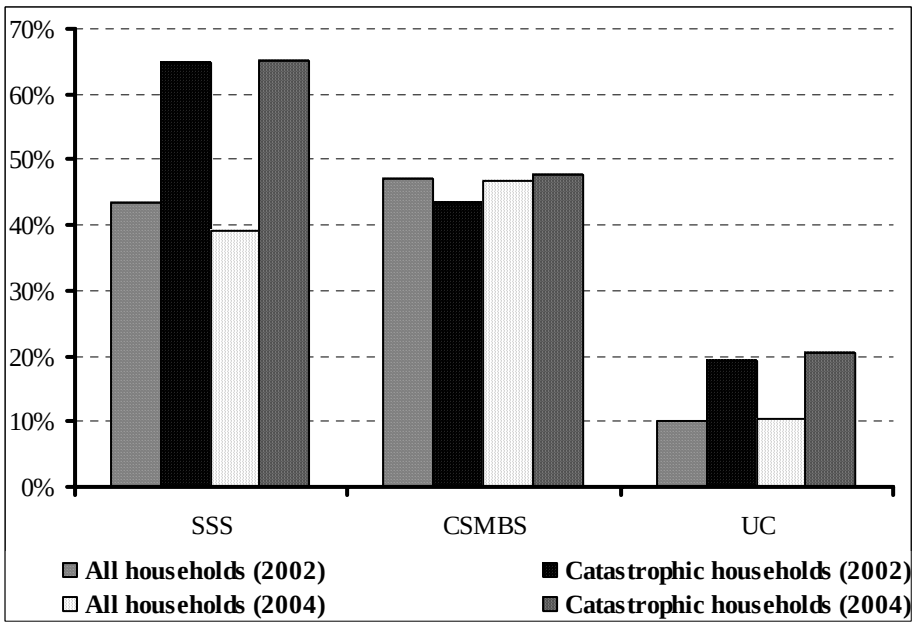
Source: SES 2000, 2002, 2004
Note:
[a] OOP health share > 10% of total consumption including food and non-food expenditures

Figure 4A: Post-UC catastrophic incidence [a] among the poorest quintiles, by health insurance schemes, 2002-2004



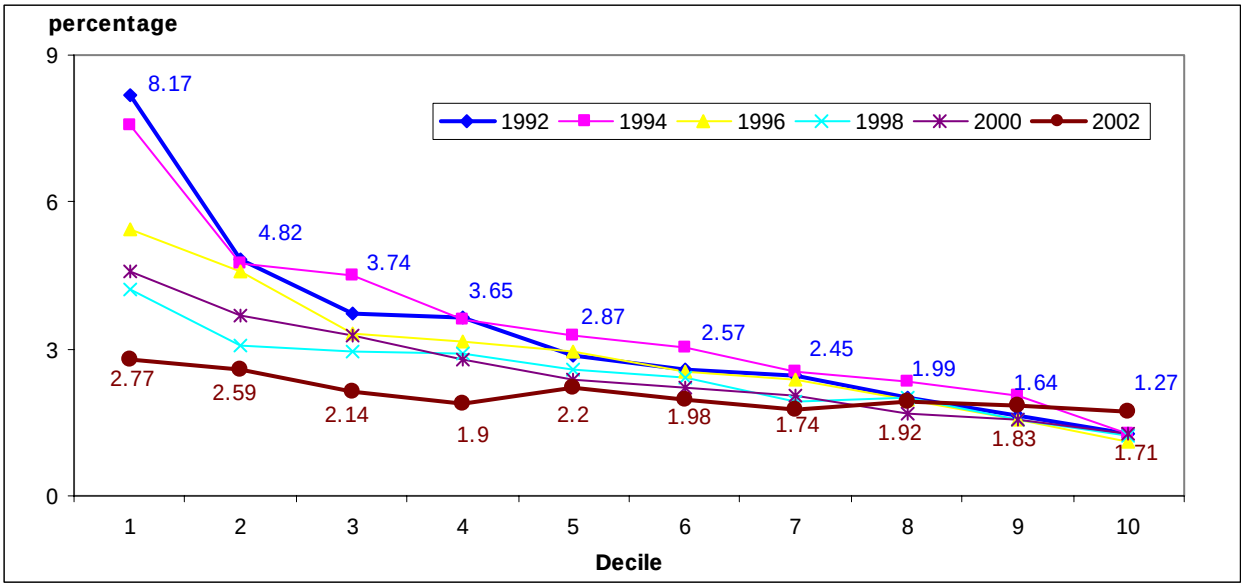
Note:
[a] OOP health share > 10% of total consumption including food and non-food expenditures
SSS –Social Security Scheme, CSMBS –Civil Servant Medical Benefit Scheme, UC –Universal Coverage Scheme

Figure 4B: Post-UC catastrophic incidence [a] among the richest quintiles, by health insurance schemes, 2002



Note:
[a] OOP health share > 10% of total consumption including food and non-food expenditures
SSS –Social Security Scheme, CSMBS –Civil Servant Medical Benefit Scheme, UC –Universal Coverage Scheme

Figure 5: Out of pocket payment for health care as percent of monthly income by per capita income deciles, prior to UC (1992-2000) and after UC (2002)



Source: Data in 1992-2000 from Thailand Health Profile 1999-2000. Data in 2002 were analysis of Socio-Economic Survey 2002

Table 1: Data characteristics and variable definitions

Data source	Sample size	Survey period	Living standard		Health care utilization		OOP health payment
			Concept	Period	Measurement unit	Recall period	Recall period
HWS 2001	222,248 individuals	Apr. 2001 (one month)	Income (15 intervals)	Monthly average	IP: Number of admissions	IP: Prior 12 months	IP: Prior 12 months
HWS 2004	68,109 individuals	Apr. 2004 (one month)	Income (in-cash and in-kind)	Monthly average	OP: Number of visits IP: Number of admissions	OP: Prior 1 month IP: Prior 12 months	OP: Prior 1 month IP: Prior 12 months
SES 2000	24,747 households	Jan. – Dec. 2000 (12 months)	Consumption expenditure	Prior month	N/A	N/A	Medicines: Prior 1 month OP: Prior 1 month IP: Prior 12 months
SES 2002	34,785 households	Jan. – Dec. 2002 (12 months)	Consumption expenditure	Prior month	OP: Number of visits IP: Number of admissions	OP: Prior 1 month IP: Prior 12 months	Medicines: Prior 1 month OP: Prior 1 month IP: Prior 12 months
SES 2004	34,843 households	Jan. – Dec. 2004 (12 months)	Consumption expenditure	Prior month	OP: Number of visits IP: Number of admissions	OP: Prior 1 month IP: Prior 12 months	Medicines: Prior 1 month OP: Prior 1 month IP: Prior 12 months

Note: SES –Socio-Economic Survey, HWS –Health and Welfare Survey, N/A –Not available, IP –Inpatient care, OP –Outpatient care

Table 2: Distribution of individual household members by income quintiles for major health insurance schemes, 2004

	All population [a]	SSS	CSMBS	UCE	UCP
Quintile 1	20.0%	2.0%	10.2%	30.8%	19.4%
Quintile 2	20.0%	4.7%	6.1%	27.8%	22.6%
Quintile 3	20.0%	12.1%	9.6%	21.3%	23.9%
Quintile 4	20.0%	31.9%	22.9%	13.9%	20.7%
Quintile 5	20.0%	49.3%	51.2%	6.2%	13.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%
Sample size	68,109	7,105	6,398	20,865	29,235

Source: HWS 2004

[a] Include other types of health insurance schemes and no insurance

SSS –Social Security Scheme, CSMBS –Civil Servant Medical Benefit Scheme, UC –Universal Coverage Scheme (UCE with exempted copayment, UCP with required payment of 30-Baht copay)

Table 3: Distribution of living standard [a] by income quintiles for all population (2001 and 2004) and major health insurance schemes (2004)

	Year 2001	Year 2004				
	(All population)	All population [b]	SSS	CSMBS	UCE	UCP
Quintile 1	1.8%	1.8%	0.03%	0.2%	5.2%	2.2%
Quintile 2	6.2%	6.5%	1.0%	1.1%	15.3%	9.5%
Quintile 3	12.1%	12.7%	5.0%	3.0%	23.9%	19.3%
Quintile 4	24.0%	22.4%	21.3%	12.2%	27.4%	29.4%
Quintile 5	56.0%	56.6%	72.7%	83.5%	28.1%	39.6%
Total	100.0%	100.0%	100.0 %	100.0 %	100.0 %	100.0 %
Concentration index	0.5048	0.5162				
Standard error	0.0015	0.0047				

Source: HWS 2001, 2004

[a] based on average household income per capita

[b] Include other types of health insurance schemes and no insurance

SSS –Social Security Scheme, CSMBS –Civil Servant Medical Benefit Scheme, UC –Universal Coverage Scheme (UCE with exempted copayment, UCP with required payment of 30-Baht co pay)

Table 4: Distribution of public health care utilization and subsidy –Outpatient care, post-UC in 2004

	Health centre	District hospital	Provincial hospital
Utilization			
Quintile 1	33.1%	31.2%	25.4%
Quintile 2	25.7%	25.7%	19.3%
Quintile 3	24.2%	20.1%	21.8%
Quintile 4	12.0%	15.8%	15.9%
Quintile 5	4.9%	7.3%	17.6%
Concentration index	-0.3144	-0.2843	-0.1477
Standard error	0.0172	0.0210	0.0293
Kakwani index	-0.8598	-0.8286	-0.6868
Standard error	0.0184	0.0224	0.0308
Public subsidy			
Quintile 1	34.5%	31.9%	25.8%
Quintile 2	25.9%	25.8%	19.2%
Quintile 3	23.8%	20.3%	21.7%
Quintile 4	11.5%	14.6%	15.3%
Quintile 5	4.3%	7.4%	18.0%
Concentration index	-0.3326	-0.2921	-0.1496
Standard error	0.0186	0.0212	0.0302
Kakwani index	-0.8787	-0.8367	-0.6888
Standard error	0.0198	0.0225	0.0318

Source: HWS 2004

Table 5: Distribution of public health care utilization and subsidy –Inpatient care, pre-UC 2001, and post-UC 2004

	District hospital		Provincial hospital	
	Year 2001	Year 2004	Year 2001	Year 2004
Utilization				
Quintile 1	30.3%	26.9%	20.6%	20.3%
Quintile 2	26.6%	25.0%	17.8%	18.8%
Quintile 3	18.9%	23.3%	19.9%	21.3%
Quintile 4	16.0%	16.1%	24.1%	22.7%
Quintile 5	8.1%	8.7%	17.5%	16.9%
Concentration index	-0.3041	-0.2589	-0.0729	-0.1149
Standard error	0.0154	0.0196	0.0110	0.0187
Kakwani index	-0.8329	-0.8046	-0.5948	-0.6551
Standard error	0.0159	0.0209	0.0115	0.0201
Public Subsidy				
Quintile 1	31.2%	27.4%	22.1%	20.9%
Quintile 2	26.6%	25.5%	19.4%	18.6%
Quintile 3	18.7%	22.7%	20.4%	21.8%
Quintile 4	15.5%	16.0%	22.5%	22.0%
Quintile 5	7.9%	8.4%	15.6%	16.6%
Concentration index	-0.3130	-0.2666	-0.1104	-0.1221
Standard error	0.0162	0.0201	0.0117	0.0193
Kakwani index	-0.8421	-0.8125	-0.6334	-0.6626
Standard error	0.0167	0.0214	0.0122	0.0207

Source: HWS 2001, 2004

Table 6: Distribution of households by expenditure quintiles for major health insurance schemes, 2002, 2004

	All households[a]	SSS	CSMBS	UC
Year 2002	(N=34,785)	(N=3,231)	(N=4,082)	(N=22,786)
Quintile 1	20.0%	0.6%	3.9%	26.4%
Quintile 2	20.0%	5.6%	7.4%	25.3%
Quintile 3	20.0%	16.3%	15.7%	21.7%
Quintile 4	20.0%	34.2%	26.0%	16.6%
Quintile 5	20.0%	43.3%	47.1%	10.0%
Total	100.0%	100.0%	100.1%	100.0%
Year 2004	(N=34,843)	(N=3,375)	(N=4,405)	(N=24,443)
Quintile 1	20.0%	0.9%	4.9%	26.3%
Quintile 2	20.0%	6.2%	9.2%	24.9%
Quintile 3	20.0%	17.8%	15.2%	21.8%
Quintile 4	20.0%	36.1%	24.1%	16.7%
Quintile 5	20.0%	39.1%	46.7%	10.4%
Total	100.0%	100.0%	100.0%	100.0%

Source: SES 2002, 2004

[a] Include other types of health insurance schemes and no insurance

SSS –Social Security Scheme, CSMBS –Civil Servant Medical Benefit Scheme, UC –Universal Coverage Scheme

Table 7: Distribution of household living standards by expenditure quintiles for major health insurance schemes, 2000, 2002, 2004

	All households[a]	SSS	CSMBS	LIC/VHC UC[b]
Year 2000				
Quintile 1	3.9%			10.1%
Quintile 2	7.4%			17.8%
Quintile 3	12.9%			24.2%
Quintile 4	23.6%			25.5%
Quintile 5	52.2%			22.3%
Total	100.0%	N/A	N/A	100.0%
Concentration index	0.3664			
Standard error	0.0061			
Year 2002				
Quintile 1	4.7%	0.2%	0.5%	8.2%
Quintile 2	8.7%	2.6%	1.5%	14.5%
Quintile 3	13.9%	8.5%	5.7%	20.6%
Quintile 4	22.6%	24.3%	18.7%	25.5%
Quintile 5	50.1%	64.5%	73.6%	31.2%
Total	100.0%	100.0%	100.0%	100.0%
Concentration index	0.3676			
Standard error	0.0030			
Year 2004				
Quintile 1	4.3%	0.4%	0.6%	8.0%
Quintile 2	8.5%	3.3%	2.2%	14.5%
Quintile 3	14.1%	10.3%	6.6%	20.9%
Quintile 4	21.3%	26.6%	16.0%	24.1%
Quintile 5	51.9%	59.5%	74.6%	32.5%
Total	100.0%	100.0%	100.0%	100.0%
Concentration index	0.3767			
Standard error	0.0049			

Source: SES 2000, 2002, 2004

[a] Include other types of health insurance schemes and no insurance

[b] LIC/VHC –Low-Income Card and Voluntary Health Card schemes for 2000 and UC – Universal Coverage Scheme for 2002 and 2004

SSS –Social Security Scheme, CSMBS –Civil Servant Medical Benefit Scheme

Table 8: Incidence of catastrophic health payment [a] by health insurance schemes, 2000, 2002, 2004

	All households[b]	SSS	CSMBS	LIC/VHC UC[c]
Year 2000				
Quintile 1	4.0%			2.7%
Quintile 2	6.6%			5.3%
Quintile 3	5.4%			4.8%
Quintile 4	5.6%			6.9%
Quintile 5	5.6%			7.1%
All Quintiles	5.4%	N/A	N/A	4.7%
Year 2002				
Quintile 1	1.7%	0.0%	0.5%	1.7%
Quintile 2	2.1%	0.0%	4.9%	0.2%
Quintile 3	3.6%	0.7%	4.6%	3.8%
Quintile 4	4.0%	2.0%	3.9%	4.8%
Quintile 5	5.0%	3.4%	3.5%	6.1%
All Quintiles	3.3%	2.3%	3.8%	3.2%
Year 2004				
Quintile 1	1.6%	0.0%	1.6%	1.6%
Quintile 2	2.4%	1.4%	7.2%	2.0%
Quintile 3	2.7%	0.3%	5.0%	2.8%
Quintile 4	2.9%	1.1%	3.5%	3.3%
Quintile 5	4.3%	2.5%	4.6%	5.2%
All Quintiles	2.8%	1.5%	4.5%	2.6%

Source: SES 2000, 2002, 2004

Note:

[a] OOP health share > 10% of total consumption including food and non-food expenditures

[b] Include other types of health insurance schemes and no insurance

c LIC/VHC –Low-Income Card and Voluntary Health Card schemes for 2000 and UC – Universal Coverage Scheme for 2002 and 2004

SSS –Social Security Scheme, CSMBS –Civil Servant Medical Benefit Scheme

Table 9: Incidence of household impoverishment due to OOP for healthcare [a] by health insurance schemes, 2000, 2002, 2004

	All households [b]	SSS	CSMBS	LIC/VHC UC[c]
Year 2000				
Quintile 1	18.3%			16.4%
Quintile 2	1.5%			1.4%
Quintile 3	1.0%			1.0%
Quintile 4	0.8%			0.8%
Quintile 5	0.6%			1.7%
All Quintiles	4.4%	N/A	N/A	5.8%
Year 2002				
Quintile 1	10.3%	2.4%	9.4%	9.8%
Quintile 2	0.5%	0.0%	0.1%	0.6%
Quintile 3	0.5%	0.1%	0.4%	0.6%
Quintile 4	0.6%	0.0%	0.2%	0.8%
Quintile 5	0.8%	0.4%	0.2%	1.0%
All Quintiles	2.5%	0.2%	0.6%	3.1%
Year 2004				
Quintile 1	8.0%	7.6%	5.5%	7.6%
Quintile 2	0.3%	0.2%	1.4%	0.2%
Quintile 3	0.3%	0.0%	0.3%	0.3%
Quintile 4	0.3%	0.0%	0.2%	0.3%
Quintile 5	0.3%	0.0%	0.2%	0.7%
All Quintiles	1.8%	0.1%	0.6%	2.2%

Source: SES 2000, 2002, 2004

Note:

[a] Post-OOP impoverished households (with consumption expenditure net of OOP payment for health care below Thailand's national poverty lines)

[b] Include other types of health insurance schemes and no insurance

c LIC/VHC –Low-Income Card and Voluntary Health Card schemes for 2000 and UC – Universal Coverage Scheme for 2002 and 2004

SSS –Social Security Scheme, CSMBS –Civil Servant Medical Benefit Scheme

Table 10: Poverty impact of OOP payments for health care: -Change in poverty headcounts [a] (in percentage points)

	All households[b]	SSS	CSMBS	LIC/VHC UC[c]
Year 2000				
Quintile 1	6.7%			5.9%
Quintile 2	1.5%			1.4%
Quintile 3	1.0%			1.0%
Quintile 4	0.8%			0.8%
Quintile 5	0.6%			1.7%
All Quintiles	2.1%	N/A	N/A	2.6%
Year 2002				
Quintile 1	2.0%	0.0%	2.7%	1.9%
Quintile 2	0.5%	0.0%	0.1%	0.6%
Quintile 3	0.5%	0.1%	0.4%	0.6%
Quintile 4	0.6%	0.0%	0.2%	0.8%
Quintile 5	0.8%	0.4%	0.2%	1.0%
All Quintiles	0.8%	0.2%	0.3%	1.0%
Year 2004				
Quintile 1	1.6%	0.0%	1.0%	1.5%
Quintile 2	0.3%	0.2%	1.4%	0.2%
Quintile 3	0.3%	0.0%	0.3%	0.3%
Quintile 4	0.3%	0.0%	0.2%	0.3%
Quintile 5	0.3%	0.0%	0.2%	0.7%
All Quintiles	0.5%	0.0%	0.3%	0.6%

Source: SES 2000, 2002, 2004

Note:

[a] Difference in percentage of counts of impoverished households (with consumption expenditure below the national poverty lines) before and after OOP health payment

[b] Include other types of health insurance schemes and no insurance

c LIC/VHC –Low-Income Card and Voluntary Health Card schemes for 2000 and UC – Universal Coverage Scheme for 2002 and 2004

SSS –Social Security Scheme, CSMBS –Civil Servant Medical Benefit Scheme

Table 11: Poverty impact of OOP payments for health care: -Change in poverty gaps [a] (in percentage points)

	All households [b]	SSS	CSMBS	LIC/VHC UC[c]
Year 2000				
Quintile 1	1.4%			1.2%
Quintile 2	0.5%			0.4%
Quintile 3	0.4%			0.5%
Quintile 4	0.6%			0.5%
Quintile 5	0.6%			1.6%
All Quintiles	0.7%	N/A	N/A	0.7%
Year 2002				
Quintile 1	0.4%	0.0%	0.3%	0.4%
Quintile 2	0.2%	0.0%	0.1%	0.3%
Quintile 3	0.3%	0.0%	0.3%	0.3%
Quintile 4	0.4%	0.0%	0.1%	0.6%
Quintile 5	0.8%	0.6%	0.2%	0.9%
All Quintiles	0.4%	0.3%	0.2%	0.4%
Year 2004				
Quintile 1	0.3%	0.2%	0.3%	0.3%
Quintile 2	0.1%	0.0%	0.1%	0.1%
Quintile 3	0.1%	0.0%	0.2%	0.1%
Quintile 4	0.2%	0.0%	0.1%	0.2%
Quintile 5	0.3%	0.0%	0.2%	0.7%
All Quintiles	0.2%	0.0%	0.1%	0.2%

Source: SES 2000, 2002, 2004

Note:

[a] Difference in normalized poverty gaps (mean values of the gaps below the poverty lines as percentage of the whole-country poverty line) before and after OOP health payment (calculated for the impoverished households only)

[b] Include other types of health insurance schemes and no insurance

c LIC/VHC –Low-Income Card and Voluntary Health Card schemes for 2000 and UC – Universal Coverage Scheme for 2002 and 2004

SSS –Social Security Scheme, CSMBS –Civil Servant Medical Benefit Scheme

Table 12: Determinants of catastrophic incidence[a], 2002 and 2004

	2002		2004	
	Odds Ratio (OR)	**P value**	**Odds Ratio (OR)**	**P value**
Size of household	1.1071	<0.001	1.0286	0.389
% SSS [b]	0.9889	<0.001	0.9879	<0.001
% CSMBS [b]	0.9956	0.016	1.0000	0.994
% UC [b]	1.0000	0.998	0.9975	0.161
% Adults (15-60 yr.)[c]	0.9848	<0.001	0.9892	<0.001
% Children (< 15 yr.)[c]	0.9801	<0.001	0.9823	<0.001
Primary education [d]	0.7865	0.178	0.6355	0.009
Secondary education [d]	0.5772	0.009	0.3290	<0.001
High education [d]	0.4931	0.002	0.3570	<0.001
Rural vs. urban areas	1.1964	0.036	1.2664	0.012
Central region [e]	0.8877	0.415	0.9068	0.576
Northern region [e]	0.8661	0.388	0.9813	0.920
Northeastern region [e]	0.9359	0.682	1.0106	0.954
Southern region [e]	0.7190	0.054	0.9803	0.919
Expenditure quintiles 2 vs. 1	1.5769	0.021	1.8763	0.002
Expenditure quintiles 3 vs. 1	3.1659	<0.001	2.5654	<0.001
Expenditure quintiles 4 vs. 1	4.6511	<0.001	3.4071	<0.001
Expenditure quintiles 5 vs. 1	7.5157	<0.001	6.1327	<0.001

Source: SES 2002, 2004

Note:

[a] OOP health share > 10% of total consumption including food and non-food expenditures

[b] % of household members who are beneficiaries of SSS –Social Security Scheme, CSMBS – Civil Servant Medical Benefit Scheme, UC –Universal Coverage Scheme, % Private insurance and % No insurance were omitted

[c] % Elderly (> 60 yr.) was omitted

[d] compared against No education as the reference category

[e] compared against Bangkok as the reference category

Table 13 Trend in **c**ompliance to services entitled to UC members, 2003 and 2004.

	2003			2004		
	Whole	Municipality	Rural	Whole	Municipality	Rural
OP	100.0	100.0	100.0	100.0	100.0	100.0
Non-compliance	**43.4**	**58.8**	**39.5**	**46.7**	**62.3**	**42.7**
Compliance	56.6	41.2	60.5	53.3	37.7	57.3
UC-Exempt	62.6	50.0	65.1	60.3	49.0	62.2
UC-co pay	49.2	34.3	54.3	45.5	30.7	50.8
IP	100.0	100.0	100.0	100.0	100.0	100.0
Non-compliance	**19.1**	**34.7**	**14.9**	**19.5**	**34.5**	**15.6**
Compliance	80.9	65.3	85.1	80.5	65.5	84.4
UC-Exempt	84.8	72.7	87.0	87.1	75.8	89.3
UC-co pay	77.3	60.8	83.1	74.0	55.3	79.6

Source: NSO HWS2003 and HWS2004