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Changing access to health services in urban China: implications for equity

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The ongoing reform of public institutions and state-owned enterprises in urban China has had a profound impact on the financing, organization and provision of health services. Access to health care by the urban population has become more inequitable. One of the most pressing concerns is that those who have lost jobs have increasing difficulties accessing health care.

Using the data from the national household health surveys conducted in 1993 and 1998, this paper presents empirical results of changing utilization of health care among different income groups. Over 16 000 households and 54 000 individuals in the urban areas were randomly selected to collect information on perceived need of and demand for health care and expenditures on the services.

The findings show that the income gap between the highest and lowest income groups increased in real terms from 1993 to 1998. There was a significant decline in the population covered by the government insurance scheme (GIS) and the labour insurance scheme (LIS), while the proportion of the population who had to pay for services out-of-pocket increased from 28% in 1993 to 44% in 1998.

There was no statistically significant change in self-reported illness in the 2 weeks prior to survey among the study population over the period. While it was found that more people who reported illness from each income group received medical treatment of some kind, there was a decline in seeking care from a health provider. Among those in the lowest income group who reported illness but did not obtain treatment of any kind, nearly 70% (as compared with 38% in 1993) claimed financial difficulty as the major reason in 1998. The use of in-patient services dropped significantly from 4.5% in 1993 to 3.0% in 1998. The decreased use of in-patient services was more serious in the lowest and lower income groups than in higher and highest income groups. The percentage of patients referred for hospital admission but not being hospitalized had a negative relationship with income level. We can conclude from the data analysis that access of the urban population, particularly the poor, to formal health services has worsened and become more inequitable since the early 1990s. Among possible reasons for this trend are the rapid rise of per capita expenditure on health services and the decline in insurance coverage.

Introduction

China's economic reform launched in the late 1970s has led to a radical transition from a planned economy to a market one, with inevitably profound impacts on the life of the Chinese population in either positive or negative ways. While the income level and the living standards of a majority of the population have improved significantly since the economic reforms, there have been major concerns about increasing inequity in access to health care, among other social services. These concerns concur with a renewed awareness of health inequalities amongst international health policy-makers (Gwatkin 2000) in the context of economic and health sector reforms world-wide. Until recently there has been 'little reliable quantitative evaluation of the inequalities that exist in developing countries, in terms of either health status or access to care' (Makinen et al. 2000). However, there is a growing body of work aiming to provide policy-makers with an information base for making and evaluating decisions,[1] to which this paper aims to contribute.

The 15th Communist Party Congress in 1997 endorsed an economic efficiency oriented reform of public institutions and state-owned enterprises in urban China, which has accelerated the pace of economic liberalization. Concurrently, and related to this, reforms of the health services, particularly related to health service financing, were taking place. Between 1950 and 1980 China established a health care system that provided almost all its citizens with access to basic health services at an affordable price (Tang et al. 1994). In the urban areas it functioned as a publicly funded and centrally managed health service through two major schemes – the government insurance scheme (GIS) and the labour

insurance scheme (LIS) (Gu and Tang 1995; Liu and Hsiao 1995). The former covered mainly employees working in the public sector and government agencies as well as college and university students. The latter provided full cover to workers in state-owned and collective-owned enterprises and partial cover for their direct dependants. Since the 1980s there have been changes in the two schemes. Some changes are associated with the introduction of cost containment (i.e. co-payment), which aimed to control a rapid rise in health care costs. Specific changes have been various. For example, some enterprises provide their employees with a fixed monthly sum of money for health care and the employees have to take full responsibility for health services they seek. Other changes have also reduced the ability of the two schemes to ensure the access of employees to basic health services. The number of people in the urban areas who have to pay for their health care is growing as more people work for small private or collectively owned firms and more rural residents migrate to cities for temporary work. In the meantime, the unit cost of and expenditure on urban health services has risen rapidly, as a result of changes in government financing of the health sector and the increasing use of high level medical technologies and expensive drugs. Therefore, access to health care is becoming increasingly unequal in urban China (Yuen 1996; Liu et al. 1999).

Equity, as a concept, refers to fairness and social justice as opposed to equality, which refers to 'sameness' amongst individuals or groups (Mooney 1994). Equity is notoriously difficult to define and operationalize within the health sector (Pereira 1989; Donaldson and Gerard 1992; Wagstaff and Doorslaer 1993). However, distinguishing between equity considerations arising on the financing side of health services and those on the delivery side is useful (Le Grand 1999). Two principles, the benefit principle and the ability to pay principle, are often used in debating how health services are financed. The benefit principle means that those who benefit from the services should pay for them, whilst the ability to pay principle argues that individuals should pay for services according to their means. Another two principles, equal treatment for equal need and equality of access, are used to discuss how the services should be delivered. Equal treatment for equal need requires that all those with a similar need for treatment should receive similar treatment, while equality of access means that everyone should face similar personal costs of accessing health services.

This study utilizes the principles of ability to pay, equal treatment for equal need and equality of access to assess whether observed inequalities may be considered inequitable. The major reason for using these principles is that universal access to health care is enshrined in the Constitution of the People's Republic of China. Therefore, in principle, health care services should be provided equally to those with equal need, regardless of their ability to pay. However, there are increasing concerns that the health care financing reforms are leading to inequalities in access to services because of differing ability to pay for care.

The paper aims to examine the changing utilization of health care in the population in the context of economic liberalization and associated reforms (i.e. reform of the state-owned enterprises) in the urban areas of China. It also discusses the implications of these changes for equity in access to health care for different socioeconomic groups. We recognize that the issue of gender equity is very important in discussing equity in access to health care and this is discussed in a separate paper.

Data collection and analysis

The data used in this paper were derived from household health interview surveys conducted in 1993 and 1998, which covered both urban and rural population. In 1993, the Ministry of Health of China decided to conduct the National Health Service Survey (NHSS) every 5 years to collect relevant information on utilization of and expenditure on health services, which aims to help Chinese policy-makers formulate appropriate health policies. The NHSS, organized by the Centre for Health Statistics and Information, includes mainly a household health interview survey and a health facility-based survey. This paper has only used the urban component of the data set related to the household health interview surveys for its analysis.

The household health interview survey sampling procedure

A four-stage stratified random sampling procedure was used to select the households for interview. The first stage of sampling was to identify cities in the urban areas and counties in the rural areas. Ten indicators of socioeconomic development were used to categorize over 2400 cities and counties into seven strata, which were given different weight.[2] Then, a number of cities and counties were randomly selected from each stratum. In the second stage of sampling, five townships in each selected county in rural areas and five streets[3] in each selected city were randomly chosen. The following stage was to select randomly two villages in each selected township in the rural areas and two residential committees in each selected street in the urban areas. The fourth stage of sampling was to identify randomly 60 households in each village and residential committee. The probability of each household in urban China being sampled was on average about 1:5000. The same sampling procedure was used in the NHSS in 1993 and 1998. In the 1998 survey, the issue of the floating population was taken into account in sampling the urban residents. Those rural migrants who have lived in the urban areas for more than 6 months were also included for sampling.[4] Table 1 shows the number of cities, counties, households and the total population selected in the two surveys. Owing to

Table 1. Sample size of the national health service survey in 1993 and 1998

	Total	Urban	Rural
1993			
No. of cities/counties	92	27	65
No. of households	54 984	16 186	38 798
Population	215 163	54 249	160 914
1998			
No. of cities/counties	95	28	67
No. of households	56 994	16 784	40 210
Population	216 101	54 549	161 552

changes in administrative structure in some regions, there were slight differences in the number of cities and counties selected between 1993 and 1998. Thus, the number of households and the total population included in the NHSS in 1998 differed slightly from those in 1993.

Data collection of the household health interview survey

In the household health interview survey a standardized questionnaire was used for the data collection. The questionnaire contents included general information on socioeconomic, demographic and insurance characteristics of the families and family members; self-reported illness and injury in the 2 weeks prior to the survey; use of outpatient and inpatient services, including maternal and child health service use; and health care spending. The information on self-reported illness and injury and the use of outpatient services reflected what happened over the 2 weeks prior to the surveys in 1993 and 1998. However, the information on the use of inpatient services reflected what happened in the year before the surveys, that is, 1992 and 1997. The questionnaire used in the 1998 NHSS was a modified version of the questionnaire used in the 1993 NHSS. The modifications were made to reflect the rapid societal changes that had occurred in China over the period. For example, very few state-owned enterprises had laid off any workers in 1993. However, there have been increasing numbers of workers laid off in the process of reforming the state-owned enterprises. Hence, the category 'laid off'[5] was added in investigating the employment status of each family member.

Key researchers at the Centre for Health Statistics and Information (mainly consisting of health statisticians, epidemiologists and health service specialists) were responsible for organizing and designing the NHSS and training supervisors from selected cities and counties. These local supervisors were mainly selected from the health statisticians of the city/county health bureaux; the numerators were chosen from the health workers at the township (street) and county (city) levels. Interview respondents were usually the mothers of the families.

Quality of the data collected

The quality of the data collected from the household health interview surveys is on the whole satisfactory in terms of representativeness of the sample and reliability of the data. The structure of the population sampled in the two surveys conducted in 1993 and 1998 was very similar to that of the population data derived from the population census in 1990. Triangulation with data from the routine health information system found that estimations of health facility use at a certain level, such as the township level, by the household survey were comparable with estimations of use at the same level by routine data. This finding, together with other tests, has convinced us that the study population sampled was representative.

Additionally, a number of measures on quality assurance were taken during the period of data collection. Five percent of the households sampled were re-visited by the supervisors to double check that the information recorded by the first numerator was correctly taken down in the questionnaire. The rates of consistency between what was recorded between the numerators and the supervisors were about 97% for major indicators except the two-week self-reported morbidity.[6] A logic check of all the data collected was undertaken to examine if there were any contradictions or information that did not make any sense.

Indicators and data analysis

The use of health services, conditional upon need, has for some time been accepted as a practical indicator of equity of access in a health system, measurable in the context of a household health survey (Anderson 1968; Makinen et al. 2000; Waters 2000). In this paper, self-reported morbidity is used as a measure of need for health care. Survey respondents were asked to report any illness or injury over the 2 weeks prior to the survey. This is a subjective measure including all types of morbidity. Subjective measures of illness of this kind are sensitive to both socioeconomic and cultural factors. Symptoms that are viewed by one culture as a normal part of life may be seen as abnormal in another culture.[7] There is also evidence that the propensity of a person to report an episode of ill health is associated with socioeconomic status. If people have little expectation of receiving care, they are less likely to interpret a symptom as being an illness (Duggal and Amin 1989). In order to offset this weakness, referrals for hospitalization by a doctor are also used as a measure of need of health care. This indicator has different weaknesses. First, it excludes those with low access to a doctor, who would not receive a referral, despite a need for in-patient care. It may also introduce a bias because of the potential financial incentives for doctors to refer patients for hospitalization.

In this paper, reported level of income is used as a proxy for socioeconomic status to examine the relationship between income and perceived needs, use of health care and health care spending in the study population. The sampled population was divided into five income groups (lowest, lower, middle, higher and highest), each comprising approximately 20% of the population (Table 2).[8] A consumer price index was used to adjust the reported income and the health care spending in order to make the two data sets (1993 and 1998) comparable. In this paper we particularly aim to highlight differentials in the use of and access to health care between the richest 20% and the poorest 20% of the population.

Using reported expenditure on the treatment of illness and injuries in the 2 weeks prior to the interviews and on hospitalization in the previous year, the average total expenditure on treatment of illness and other health services per capita was calculated. The estimated expenditures per capita were compared with the average annual income per capita to examine the differences in financial burdens borne by different income groups and the extent to which this was exacerbated by uneven distribution of insurance coverage.

Table 2. Population distribution in the different income groups

	Income group				
	Lowest	Lower	Middle	Higher	Highest
1993					
Income range	<1000	1000–1500	1500–2000	2000–2500	≥2500
% of population	21.9	21.1	19.1	18.9	18.2
1998					
Income range	<2000	2000–3000	3000–4000	4000–6000	≥6000
% of population	17.3	19.5	17.9	22.8	22.6

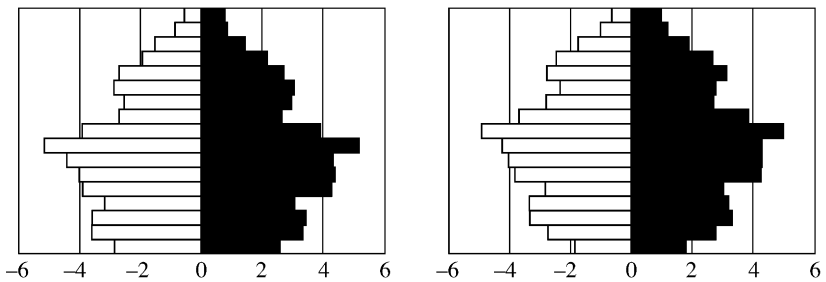

Figure 1. Changes in population age structure between (left) 1993 and (right) 1998 (white bars: male; black bars: female)

Results

This section first presents general information on changes in the age structure and socioeconomic status of the study population, as well as their employment and health insurance situations. It then reports the findings related to self-reported illness, use of health services, non-use of services and the reasons for this. Finally, the section presents some findings about changes in expenditure on health services over the study period.

Demographic, socioeconomic and employment changes

Figure 1 presents the age structure of the population selected by the two household health surveys in 1993 and 1998. The gender–age specific structures of the two study populations were not significantly different, although the study population selected by the 1998 survey was slightly more elderly. The proportion of the population over 60 years old in 1998 was 18.6%, which was 3.4% higher than the figure estimated in 1993, while the proportion of the population under 15 years old declined from 19.2% in 1993 to 15.9% in 1998. This is due largely to the strict implementation of the 'one child, one family' policy in urban China and to increased life expectancy. The authors of this paper believe that such a slight difference in age structure between the two selected years is unlikely to influence significantly rates of self-reported illness and service use.

The income level of the urban population has risen dramatically since the economic reforms. The average annual income per capita in 1993 was about 1936 (Chinese) yuan, while in 1998 it was 4333 yuan in current prices and 2645 yuan in 1993 prices. The average increase rate in average

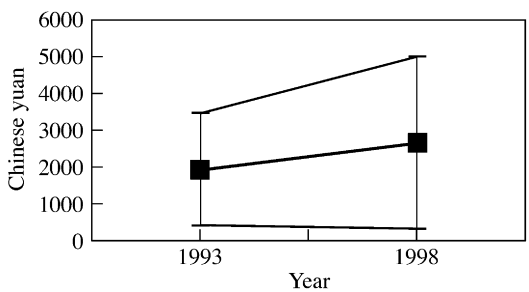

Figure 2. Change in average annual income per capita and its variance (1993 price)

income per capita for the study population was 6.5% annually, after inflation adjustment. However, the income gap between the rich and the poor became wider between 1993 and 1998 (Figure 2). The average income per capita of the highest income group was 5.6 times that of the lowest income group in 1993, while the former was 6.4 times higher than the latter in 1998. The average income level of the lowest income group (after inflation adjustment) declined between 1993 and 1998.

Data from the household health interview survey in 1998 show that about 13% of the sample population over 15 years old, excluding pupils and students attending schools, had no jobs and 8% of them had been laid off. In 1993 only 11% of the study population reported not having jobs.[9] This rise in formal and informal (laid off) unemployment is statistically significant. This finding supports estimates of unemployment in urban China by many economists (Zuo 2000).

Change in insurance coverage

Since the late 1980s there have been many health financing reforms initiated by either local or central government, aiming to tackle the problem of the rapid escalation of health care costs. Some city and county governments, as well as many state-owned enterprises, changed the policies of the GIS and LIS for their employees in various ways in order to achieve cost containment due to reduced capacity to pay high welfare costs. As a result, the GIS and LIS in many public institutions and state-owned enterprises have not been protecting their employees effectively from paying high medical bills. Those who were laid off or have lost jobs are less likely to be covered by any insurance scheme. In addition, a number of emerging private enterprises or joint venture enterprises may not provide adequate insurance coverage for their employees.

Figure 3 shows the degree of insurance coverage found by the surveys in 1993 and 1998. The proportion of the sample population covered by the GIS and LIS declined from 52% in 1993 to 39% in 1998, while the proportion of the population who were not covered by any insurance scheme rose from 28% in 1993 to 44% in 1998. Coverage decreased across all income groups, but the poorer groups suffered the largest decreases. The outcome in 1998 was that those who were less likely to be able to cover the costs of health care were also less likely to have health insurance. Women were more likely than men to lack insurance coverage in all income groups. In 1998, a total of 41.9% of women were covered by insurance as opposed to 46.3% of men, which is a statistically significant difference.

Several factors may explain this gender difference. Women are less likely to be employed in the formal sectors in China, where insurance coverage is higher. For example, in this survey in 1993, 63% of men and 53% of women were in formal employment as workers or professionals; in 1998, the proportion of both men and women in formal employment had decreased to 47% and 37% respectively. There is some evidence that women are more likely to be laid off and less likely to be re-employed than men (China Rights Forum 1999). The wives of many male formal-sector employees in small Chinese cities live with their husbands in the city but register as rural residents. They are therefore unlikely to have formal sector employment. Women were also historically more likely to be employed by collective-owned enterprises, which are particularly vulnerable to collapse in the current economic climate. Women who are retired or laid off from such enterprises may have lost their insurance coverage due to the collapse or financial difficulties of the enterprise.

Commercial medical insurance schemes have not yet played an important role in the medical care market in urban China, although their coverage has been rising.

Self-reported illness

As discussed above, self-reported illness has been widely used to measure perceived need for health care in both industrialized and developing countries. It generally reflects a lay view of morbidity, rather than that of a medical professional. Figure 4 presents self-reported illness in the 2-week period prior to the surveys. It shows that there was little difference in self-reported morbidity between 1993 and 1998. There was no statistically significant difference between the self-reported morbidity rates in these 2 years. It also appeared that the higher the income people had, the more likely they were to report illness in 1993. However, that trend was not apparent in 1998. The possible reasons for this change are not clear and need to be studied further.

Change in pattern of illness treatment

The most common responses to illness by the ordinary Chinese people are to visit the outpatient department of a health facility, to see a doctor, to buy medicine from pharmacies or to take medicine kept at home.

Figure 5 shows a significant change in the pattern of illness treatment over the study period. A greater proportion of people from all income groups who reported illness sought treatment of some kind (including all the responses mentioned above) in 1998 than in 1993. On average, the percentage of people who reported illness and received some form of treatment increased by 3%. More people who reported illness sought self-treatment in 1998 than in 1993, about 88% and 77% respectively. This implies that people were less likely to visit a health facility in 1998 than in 1993. Of those who reported illness in 1993, 59% saw a doctor. The percentage dropped to 50% in 1998, a statistically significant decrease. In addition, there was no statistically significant difference between different income groups in the percentage of people who reported illness and saw a doctor in 1993. Nevertheless,

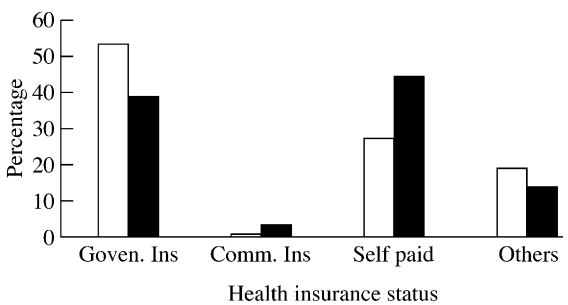

Figure 3. Change in health insurance coverage between 1993 and 1998 (white bars: 1993; black bars: 1998)

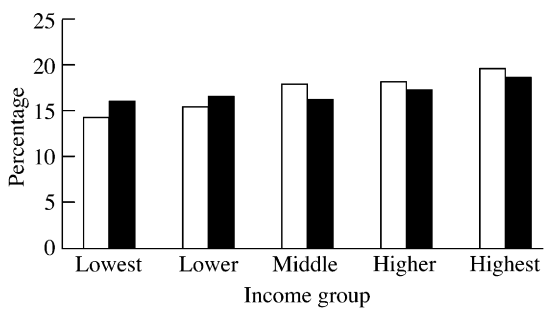

Figure 4. Two-week self-reported illness in 1993 and 1998 (white bars: 1993; black bars: 1998)

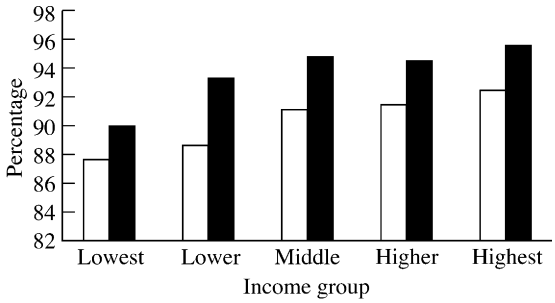

Figure 5. Percentage of people with illness in the 2-week period obtaining treatment by income group in 1993 and 1998 (white bars: 1993; black bars: 1998)

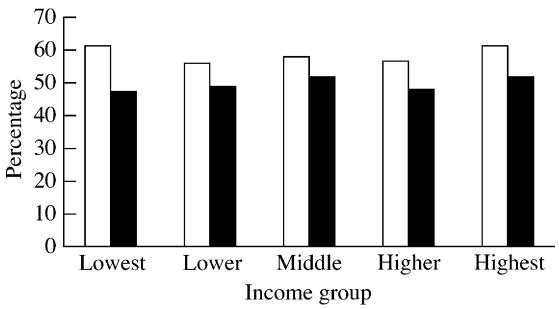

Figure 6. Percentage of people with illness visiting a health provider by income group in 1993 and 1998 (white bars: 1993; black bars: 1998)

the situation changed significantly in 1998. People in the lowest income group who reported illness were less likely to visit a health facility than those in the highest income group (Figure 6).

Clearly these changes do not necessarily represent changes in access to care, and may represent a shift towards self-treatment which serves population convenience with no consequent deterioration in health status. However, the reasons given for not seeking care provide some insight into the difficulties in accessing care for certain groups. In all but the highest income group there was an increase in the percentage of people who said that they did not see a doctor due to financial difficulty. The lower the income people had, the more likely they were to claim financial difficulty as a major obstacle to seeking treatment from a doctor.

Use and non-use of in-patient services

Hospital care services are generally expensive in most countries and people are more likely to be denied access to these services if they have inadequate insurance coverage or insufficient money to pay for the services. The results from the two surveys in 1993 and 1998 illustrate that there was a significant drop in use of in-patient services, from 4.5 in-patients per 100 people in 1992 to 3.0 in-patients per 100 people in 1997.[10] Figure 7 presents the decline in in-patient service use in different income groups. In 1992, there was no significant difference in the use of in-patient services between the income groups, with the exception of the lowest group. All

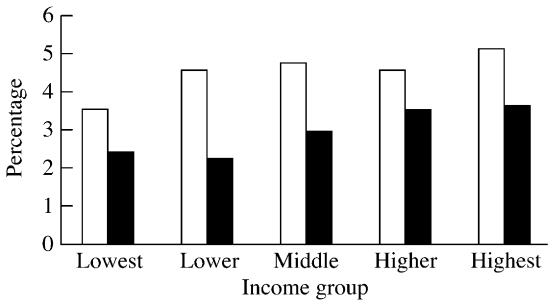

Figure 7. Changes in use of in-patient services by income group between 1993 and 1998 (white bars: 1993; black bars: 1998)

the income groups experienced reduction in use of in-patient services in the period from 1992 to 1997. However, the lower and middle-income group appeared to suffer most seriously. The annual rate of in-patient service use in the lowest and second lowest income group dropped below 2.5% in 1997. In addition, a positive relationship between income level and the use rate of in-patient services developed. This may be an indication of unmet need for hospital care services, particularly among the lower and lowest income groups. It could also be explained by an increasing rationalization of in-patient services by both doctors and patients, decreasing the inappropriate use of these services.

In order to investigate the possibility of the rationalization of services by doctors, we examined the 'non-use'[11] of in-patient services. In 1992 only 20% of the patients who were referred by doctors for hospital admission were not hospitalized, but the percentage rose to 32% in 1997. Figure 8 shows changes in the rate of non-use of in-patient services among the different income groups. In all the income groups the percentage of patients referred for hospitalization but not receiving in-patient services rose between 1992 and 1997. The lowest and second lowest income group had the most serious increases in comparison with other income groups. The gap between the rich and the poor widened significantly. In 1992 the rates of non-use of in-patient services in the lowest and highest income group were 25% and 15% respectively. However, the non-use rate for these two groups rose to 44% and 23% respectively in 1997.

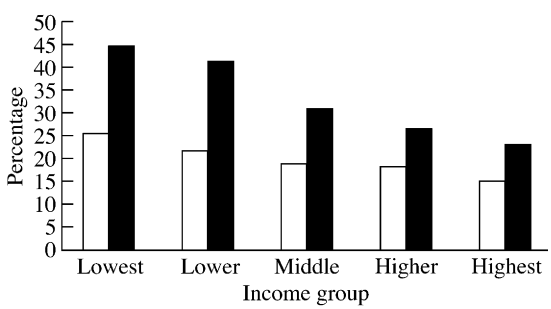

Figure 8. Percentage of patients referred for hospitalization but not receiving in-patient services by income group in 1993 and 1998 (white bars: 1993; black bars: 1998)

It is also important to understand why patients referred for hospital admission did not obtain in-patient services, because this gives some indication of whether or not there are problems of access. Survey respondents were asked to choose between a number of reasons, including financial difficulty, no perceived need, a lack of hospital beds, and dissatisfaction with the quality of the services. The results show that among those who were referred for hospital admission in 1997 but did not obtain the services, 65% claimed that financial difficulty was the major obstacle. The figure was only 40% in 1992. It is also interesting to note that about 13% gave no available hospital beds (they were put on a waiting list) as the reason for non-use of in-patient services in 1992. However, this percentage declined dramatically to 1% in 1997. This implies that there were virtually no hospital waiting lists in urban areas of China in the late 1990s.

It is not surprising that the poor were more likely to be denied in-patient care because of their low ability to pay. In 1992, about 68% of 'non-users' of in-patient services in the lowest income group attributed their non-use to financial difficulty. The figure rose to 86% in 1997. At the same time, the percentage of non-users of in-patient services in the highest income group also increased from 7% in 1992 to 31% in 1997. Therefore, even the rich in urban China experienced financial difficulty in seeking hospital care. There are also significant differences between women and men, in both years, with 55.6% of men as opposed to 64.8% of women attributing non-utilization to financial difficulty.

Increase of expenditure on health services

Since the mid-1980s people's expenditure on health care in China has risen dramatically. The speed of escalation did not diminish in the mid-1990s, although numerous measures were taken to tackle the problem. Table 3 presents increases in average income per capita, average expenditure on outpatient visits and average expenditure on in-patient services. Between 1992 and 1997, the average annual increase rate of average income per capita was 6.5% in real terms. The lowest income group had no increase in income level in real teams, while the highest income group had the fastest increase rate. Over the period, the average expenditure on outpatient visits and in-patient services rose more rapidly than the average income per capita. The average annual increase rates of average expenditure on outpatient visits and in-patient care were, respectively, 10.2% and 13.8% in real terms. Expenditure on in-patient services was particularly high; the average expenditure on in-patient services in 1998 was about 2500 yuan (in current prices), which accounted for roughly half of the average annual income per capita in the urban population.

This increase in expenditure may be partially explained by the increasing use of high level medical technologies and expensive drugs, but may also be partly related to increasing unit costs of health services. The determinants of these phenomena are complex and will not be discussed here.

Table 3. Average annual income per capita and average expenditure on health services in 1993 and 1998 (in 1993 Yuan)

Group	Average income	Outpatient exp.	In-patient exp.
Total average			
1993	1938	30	800
1998	2655	49	1527
Increasing rate (%)	6.50	10.24	13.79
By income groups			
Lowest			
1993	692	23	500
1998	824	31	916
Increasing rate (%)	3.56	5.83	12.87
Lower			
1993	1222	25	600
1998	1476	37	1221
Increasing rate (%)	3.86	7.94	15.27
Middle			
1993	1684	30	760
1998	2057	43	1343
Increasing rate (%)	4.08	7.34	12.07
Higher			
1993	2202	30	850
1998	2836	58	1527
Increasing rate (%)	5.19	14.10	12.42
Highest			
1993	3876	30	1000
1998	5313	61	2137
Increasing rate (%)	6.51	15.27	16.40

Discussion

The preceding sections have presented the most significant findings from the analysis of data collected in the national household health interview surveys conducted in 1993 and 1998. Due to space limitations, the following discussion focuses mainly on key factors that are closely associated with changing access to health care, that is, increased unemployment and declined coverage by the GIS and the LIS, and the escalating cost of and expenditure on health services. The implications for equity in health and health care are also discussed at the end of this section.

Increased unemployment and decline in coverage of GIS and the LIS

Prior to the economic reforms, a range of benefit entitlements, one of which was health insurance, were linked to an individual's employment. As discussed previously, the GIS covered employees in public sector institutions (e.g. schools and hospitals), university and college students and others (Gu and Tang 1995), while the LIS covered workers from the state-owned enterprises and most of the collective-owned enterprises. Almost all benefit entitlements are lost when an individual loses a job. As shown above, 13% of the population over 15 years old had no jobs in 1998. They might have been able to claim minimum income support from the municipal governments, but were unlikely to continue to be covered by

the insurance schemes. In addition, about 8% of the adult population claimed that they had been laid-off by their employers in 1998. Local governments and employers often insist that these laid off workers are still receiving medical care benefits. Nevertheless, key informant interviews and focus group discussions conducted recently by two of the authors in two Chinese cities demonstrate that, in practice, such benefits are either very limited (up to 20 Chinese yuan, less than £2, lump sum each month) or virtually non-existent. Furthermore, many of the small and middle-scale private enterprises to emerge over the past decade or so do not provide their employees with appropriate health insurance.

As a result of the change in the employment situation in urban China, the decline in GIS/LIS coverage and the rise in the proportion of the urban population who have to pay out-of-pocket for health care is inevitable. This in turn is likely to lead to more difficulties in seeking health care for some sections of the urban population. Furthermore, the benefits provided by the GIS and the LIS schemes have changed greatly, even for those fortunate enough to be covered by them. Reforms to the GIS and the LIS by different local governments and enterprises themselves have resulted in great variation between individual schemes; for example, in terms of the percentage of co-payment by the insured or ceilings set for annual maximum expenditure (Hu et al. 1999). Ten or 15 years ago, even the poor could have access to sophisticated medical treatment for cancer or heart diseases, as long as they were covered by the GIS and the LIS. Nowadays, even if an individual is covered by these schemes, they may not be able to use in-patient services simply because they would be unable to pay the excess (deductible) or a share of the expenditure defined by a co-payment system.

The central and local governments in China have been experimenting with various reforms of the GIS and LIS since the late 1980s, aiming to de-link employment status from health insurance coverage and establish a meaningful social security system (World Bank 1996). However, few experimental schemes have been found to be successful or replicable in most of the urban areas. Another new attempt to design and implement a health insurance scheme for all employees in urban areas has recently been launched. This time the central government aims to establish a new scheme that can really cover the vast majority of employees with the level of service coverage appropriate to the level of economic development.

Significant increase in cost of health care services

Many studies found that whether or not people use health services when they are ill is apparently linked to whether or not they are covered by health insurance, and with how much they would have to pay for the services out-of-pocket (Shaw and Griffin 1995). An increase in service prices may discourage people, particularly the poor, from using the services. Therefore, the issue of rapid escalation of health care expenditure and unit cost has been a major concern in debates about the financing and use of health services in China since its transformation from a planned economy to a market one. The total health expenditure per capita grew by 8% per year in real terms from 1978 to 1986, and accelerated to 11% per year from 1986 to 1993 (Liu and Hsiao 1995). The findings presented above illustrate that average annual increases in outpatient and in-patient expenditure between 1993 and 1998 were far greater than increases in the average annual income per capita in real terms. Other studies have shown increases in the unit costs of health care services to users (Liu and Meng 1996). Therefore, more people, particularly those with low income, have experienced increased financial difficulty in seeking outpatient and, in particular, in-patient care.

It is not the primary objective of this paper to discuss why health expenditure has escalated so rapidly in China. However, this rapid growth is likely to be accelerated by the lack of adequate mechanisms for controlling service providers' behaviour, heavy provider reliance on fee-for-service payment methods, and price distortions in the health sector. Hospitals and other health providers in China are allowed to make profits from drug sales and the provision of sophisticated diagnostic tests, while they keep prices of basic services at a lower level (than real costs) (Liu et al. 2000). Hence, over-prescription and the misallocation of resources towards expensive drugs and diagnostic technologies are a major economic efficiency issue in China's health care system.

Implications for equity in health and health care

What are the implications of these trends for the health status of disadvantaged groups in urban China? To date, the worsening access to health care has not been reflected in deteriorating morbidity or mortality indicators for urban China, except for the under-five mortality rate being stagnant since the late 1980s (World Bank 1996). There are a number of possible reasons for this. First, there may be a time delay between worsening access to health care and increased morbidity and mortality. Secondly, recent studies on equity in urban China suggest that for the majority, health-seeking behaviour for chronic conditions is particularly affected (Qian et al. 2001). These changes can significantly affect quality of life but are unlikely to be reflected in mortality rates or traditional data on morbidity. Thirdly, access to health care is only one of a host of social, economic and environmental factors that interact to influence morbidity and mortality in any given population. China's reforms are impacting upon these factors in varied and complex ways that differ among societal groups. It is likely that the combination of worsening access to health care with other socio-economic and environmental vulnerabilities will lead to increased risk of ill-health and mortality for certain disadvantaged groups. The investigation of these vulnerabilities will require the development of more sophisticated research methodologies. However, the findings of this study indicate an important strand of the complex web of causation of health inequalities.

What are the implications of these findings for equity in access to health care services in urban China? We have found significant changes in health care utilization between 1993 and 1998, and these findings are supported by routine

utilization data. Arguably, changes in service utilization do not necessarily represent changes in access to services. This is particularly the case with regard to use of outpatient services. Historically there has been a very high level of outpatient services use for minor ailments in urban China. Given the general increase in treatment rates for illness reported in the 2 weeks prior to survey, it could be argued that the use of outpatient services has merely been rationalized, with many opting for more convenient and inexpensive forms of treatment for minor illnesses. In the case of in-patient care, 'non-use' of services may also represent a population response to perceived over-treatment.

However, the findings do suggest some problems in accessing services and these problems are clearly particularly severe for the lowest income groups. Increasing problems in accessing services for some groups are particularly suggested by changes in the reasons given for non-utilization of services. The decline in health insurance coverage and the rapid rise in health service expenditure are likely to be the key factors influencing the behaviour of the rising proportion of the population who did not use services for financial reasons. Financial problems in using services are not only affecting the urban poor, but also those with an average income level who suffer from catastrophic diseases and need hospital care, but do not have health insurance or have health insurance that requires a high percentage of co-payment or has a low ceiling.

Nevertheless, it is clear that the non-use of health services despite the need for health care is related to income. We have found that poorer people (in the lowest and second lowest income groups) are less likely to use services. This is probably because they are the least likely to be covered by any health insurance scheme as well as having less income to spend on increasingly expensive health services. They are therefore more likely to opt for cheaper ways of treating their illness, such as buying drugs from pharmacies, or simply to not seek any care at all. Results of this kind have also been found in eight developing countries and countries in transition, where richer groups are found to have a higher probability of obtaining care when sick, and to be more likely to be seen by a doctor, than the poorer groups (Makinen et al. 2000). In addition, even those poor people who are able to access health services are likely to spend far less money on health care than the rich. A health service study conducted in rural China showed that many rural poor in-patients asked doctors to discharge them from hospitals and health centres earlier than recommended because they were unable to pay the medical care bills (Gu et al. 1995). In recent years, this has also been found in the urban areas.[12] Only those in the highest income groups, who are most likely to have employment-related or commercial health insurance, are unlikely to experience financial difficulties in seeking reasonable quality services. These findings suggest both low access to services for the urban poor and income inequality in access to services.

Both of these situations give cause for concern from an equity perspective, particularly as access appears to have worsened over the last 5 years. Although the data used in this study represent only two points in time, they suggest trends that should be closely monitored. These trends fit the pattern of a worsening situation over the past two decades, which is unlikely to be reversed unless the Chinese government can develop appropriate policies and take effective actions to protect the poor in the near future. In recent years the Chinese government has concentrated on the development of a so-called basic health insurance scheme for urban employees, which can cover up to 40% of the urban population. Those who are covered by the scheme are more likely to have adequate income and other social benefits than those are not covered. To help the urban poor and other vulnerable groups obtain access to basic health care, the central and local governments in China should consider developing a variety of health insurance schemes or medical financial assistance schemes that aim to provide these groups (including children and other dependants such as women working in the home, those without adequate social security in old age, and carers) with basic health care. So far only Shanghai and Guangdong, two of the richest regions in China, have developed medical financial assistance schemes for the urban poor claiming income support. More needs to be done by the Chinese government to ensure the access of a vast majority of the Chinese population to health services.

Equitable access to health care is also an important social good in its own right. A nation's health care system is a reflection of the society's social, political and economic condition. China's current reforms are jeopardizing the economic and social bases for equitable health care. The country once again provides a lesson to those concerned with equity in health service delivery. As Sidel (2000) pointed out recently, unless a society as a whole is concerned with equity and justice in their broadest meanings, that society will have enormous difficulty developing and sustaining equitable provision of health services to all its people.

Endnotes

[1] For example see the Special Issue of the *Bulletin of the World Health Organisation* on Inequalities in Health (2000) and Baker and van der Gaag (1993).

[2] The ten indicators included crude birth rate, crude death rate, infant mortality rate, percentage of illiteracy, percentage of the population with high-school education and beyond, percentage of the population over 65 years, percentage of the population under 15 years, and percentages of the population engaged in agricultural, industrial and service sectors.

[3] The term 'street' here represents an administrative unit in cities of urban areas in China.

[4] It is, however, likely that a proportion of economic migrants are not represented in the sampling frame. The question of how to include migrants in sampling frames for urban populations is a new and complex one in China, which has yet to be fully resolved.

[5] The term 'laid off' has a unique meaning in China. Unlike these who lost their jobs, those who were laid off by the employers still have some sort of relationship with their employers. For example, the employers continue to pay contributions into their pension fund and take limited responsibility for medical care. Clearly, such a relationship varies a great deal between different places and between different employers in China.

[6] It is likely that the lower rates of consistency found for this indicator are due to its subjective nature (discussed below). Respondents may not provide exactly the same assessment of their health status at two different points in time.

[7] There may be significant cultural differences with regard to perceptions of health and illness between survey respondents living in different geographical areas of China.

[8] These cut-off points for categorizing these income groups were devised by the researchers on the basis of approximately equal proportions of the population.

[9] In the 1993 survey the category of 'laid off' did not exist. However, there might have been a small proportion of the urban population laid off at that time, a majority of which should have been included in the 'unemployed' category.

[10] The surveys were conducted in 1993 and 1998, but the respondents were asked to report the use of in-patient services in the previous year, i.e. 1992 and 1997.

[11] In this paper, by 'non-use' of in-patient services, we refer to those patients who were referred by doctors for hospital admission, but did not actually go into hospital for various reasons.

[12] Personal communication between Shenglan Tang and the health managers of Zibo Municipal Central Hospital in August 2000.

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