Analysis Report of National Health Services Survey in China, 2008

SUMMARY

Center for Health Statistics and Information

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CONTENTS

Summary

I. Basic information about the survey

The Fourth National Health Services Survey (NHSS, 2008) was introduced when a new round of medical and health system reform was launched. In this regard, the main purpose of this survey, in addition to the performance evaluation of health reform and development of the previous five years, is to provide basic information for the implementation and assessment of the new round of medical and health system reform, and to provide proofs for "Healthy China 2020" in its planning of objectives, targets and major action plans.

A multi-stage stratified random cluster sampling method has been adopted in the Household Health Survey (HHS). 94 counties (cities or districts) from the country's 31 provinces, autonomous regions and municipalities were randomly selected, within which, 5 sample townships (or neighborhoods) were collected, totalled 470 nationwide. In each township (neighborhood), two administrative villages (or neighborhood committees), altogether 940 in the whole country were collected. Further more, 60 households from each sample village (or neighborhood committee) were randomly selected with a total number of 56,400 all over China.

Household interview method is used in HHS for information collection. After training and based on the baseline survey, qualified investigators visited sample households and interviewd with each household member one by one. HHS is conducted by investigators, mainly local medical workers who visit households for the survey, and investigation instructors, mainly doctors from township hospitals or health institutions and above, who organize, guide and inspect the survey and accept its outputs.

The main contents of HHS include: (1) the needs of urban and rural residents for health services: survey of population and socio-economic characteristics, health status based on self-evaluation, the residents' illness, injury or disability status, and health risk factors; (2) urban and rural health service needs and their utilization: treatment of illness, satisfaction rate and reasons for dissatisfaction, public health, maternal and child care, emergency and inpatience service, the utilization of hospital services, and personal payment of medical expenses, etc.; (3) health security for urban and rural areas residents: the composition of the medical security system, health insurance coverage, scope and level of compensation, and the main operation of insurance systems, etc.; (4) residents' satisfaction: including their satisfaction to the service systems, service delivery, coverage and level of health insurance.

Quality control had been applied all through the survey. Results of the survey show that: the adult in-person response rate is 83.0%, the compliance rate after countercheck is over 95%. Survey data quality and consistency tests show that: the Myer's Index is 3.48, indicating the survey has no age preference. The goodness-of-fit test shows that there is no significant difference between the sampled age distribution and the overall distribution; DELTA dissimilarity coefficient and GINI concentration ratio indicate that there is a good consistency between the size of surveyed households and that of the population.

II. Results of the Household Health Survey

(I) Basic information of the surveyed population

A total of 56,456 households or 177,501 people were investigated according to this survey. The average permernant members of a household are 3.1.

1. The sociological characteristics of the population

Among the population surveyed, males and females accounts for 50% each. The male and female sex ratios in urban and rural areas are 0.94 and 1.02 respectively. The age structure of the population surveyed is as follows: children under age 5 accounts for 5.5%, 5-14 year-olds 12.2%, 15-64 age group 70.9%, and people aged 65 and above 11.5%. Compared with the 2003 survey, China's aging population is further enlarged. The age groups of 0-4 years and over 55 years in rural areas have increased; Among the surveyed who are 15 years old and above, those without any schooling accounts for 15.5%, 26.4% has received primary school education, 35.5% has junior high school education, 16.0% has senior high school education, 3.6% has college education, and 3.0% holds a university degree or higher qualificatoin. Compared with the 2003 survey, the overall level of education of the total population has increased, the proportion of people never attended school has decreased, and that of those who have attended junior high school and above has risen; The jobless, unemployed or semi-unemployed account for 15.2%. 9.6% are retirees, 7.0% school students, 46.9% farmers and 21.3% other types of employees. In contrast with the 2003 survey, the proportion of unemployed, semi-unemployed and the retirees have all increased but that of farmers declined.

2. Household economic status

In urban areas, the average annual income and expenditure per capita of the households surveyed are 11,193 and 8,177 yuan. Out of the expenditures, food accounts for 43.7%, health spending 9.8% (average 820 yuan/year), and education spending 9.5%. In rural areas, the average annual net income per capita of the

households servuyed is 4,932 yuan and the annual per capita expenditure is 3,728 yuan, of which: food accounts for 35.6%, 14.3% on education, and 11.6% on health care (average 442 yuan /year). Among the surveyed households, poor households accounts for 9.1% (10.1% in urban areas, 8.7% in rural areas), poor households induced by self-reported illness or injury accounts for 34.5% (28.4% in urban areas, 37.8% in rural areas).

3. Living conditions of households surveyed

Their average floor space is 104.9 square meters or 33.4 square meters per capita. 85.7% (99% in urban areas, 80% in rural areas) of the households dwell in multi-floor buildings or brick bungalows; 94.5% of households have television sets and 82.5% have telephones.

4. Types of drinking water and rural waterworks

The main source of drinking water for urban residents is tap-water, accounting for 93.2% of the households surveyed, and the ratio of safe drinking water is 98.2%. In rural areas, the proportion of safe drinking water is 85.8%, higher than the 80.2% in 2003, and the proportion of drinking tap water is 42%, also significantly higher than the figure in 2003 of 34.0%. This shows that waterworks in rural areas have been improved significantly. However, 14.2% of households are still consuming unsafe water (such as water comes from rivers, lakes, ponds, ditches). The poorer the area, the higher percentage of unsafe drinking water. For example, in the class IV rural areas, there are 25.4% households with unsafe drinking water. Waterworks improvement in rural areas, particularly in backward rural areas should be strengthened.

5. Types of household toilets and rural toilet retrofitting

In urban areas, households with full ditch-installed flush toilets account for 85.9%, higher than the figure of 79.0% in 2003, the ratio of harmless disposal toilets is 89.9%, and the ratio of using sanitary toilets is 93.8%. In rural areas, the utilization rates of sanitary toilets, harmless disposal toilets and flush toilets are 43.3%, 20.6%, and 11.1% respectively. The above figures have shown the improvement in flush toilet and sanitary toilet utilization rates. However, according to this survey in 2008, there are still 56.7% of households in rural areas without any build-in toilets or with toilets below sanitary standards. In general, rural toilet retrofitting is an arduous task, especially in underdeveloped areas.

6. Assessibility of health services

In urban areas, 83.5% of the surveyed households are within a distance of 1 km from the nearest health facility, and 80.2% of households can reach the nearest health facility in less than 10 minutes. In rural areas, the above two figures are 58% and 65.6%. There are still 6.3% of households in rural areas being more than 5 km away from the nearest health facility and the figure in the class IV rural areas is 23%.

87.1% (71.9% in urban areas, 92.5% in rural areas) of the surveyed population are covered by social health insurance. 44.2% of urban residents are covered by the basic medical insurance for urban employees, 12.5% by the medical insurance for urban residents, and 3.0% are entitled to free public medical care. In rural areas, 89.7% are covered by the New Rural Cooperative Medical Scheme, and 2.9% are covered by other social health insurance.

The per capita expenditure on medical and healthcase of urban and rural households is 541 yuan, accounting for 10.8% out of household consumption expenditure. The figure in urban areas alone is 820 yuan, and in rural areas 442 yuan, accounting for 9.8% and 11.6% of the household consumption expenditure respectively. According to comparable prices, from 2003 to 2008, the average annual growth rate on medicine and health expenditure is 9.5% (8.4% in urban areas, 10.1% in rural areas), lower than the growth rate of imcome.

(II) Health status of residents and their health service needs

1. Self-rated health status of residents

The self-rated health status of residents in the survey areas is averaged at 80.1 points (79.3 points for urban areas, and 80.4 points for rural areas). The scores decline with the growth of age. For residents aged 15 and above, 5.2% have moderate or severe difficulties in "action", 3.2% have moderate or more difficulties in "taking care of themselves", 4.8% have difficulties in "daily activities", 9.2% feel moderate and higher "painful/discomfort" in their bodies and 6.4% feel "anxious and depressed".

2. Two-week morbidity

(1) The two-week morbidity rate: The two-week morbidity rate among the surveyed residents is 18.9% (22.2% in urban areas, 17.7% in rural areas), and compared with the figures in 2003 at 14.3% (15.3% in urban areas, 14.0% in rural areas), the rates in both urban and rural areas have gone up.

The top 5 two-week prevalences in urban areas are circulatory diseases, respiratory diseases, musculoskeletal diseases, digestive diseases, endocrine, nutritional and

metabolic diseases; In rural areas they are respiratory diseases, circulatory diseases, digestive diseases, musculoskeletal diseases, and genito-urinary diseases. The two-week morbidity rate of circulatory diseases continues to raise, both doubled in urban and rural areas based on those in 2003.

The most common diseases in cities are hypertension, diabetes, common cold, acute upper respiratory tract infection and ischemic heart disease. In rural areas they are hypertension, acute upper respiratory tract infection, common cold, gastroenteritis, and rheumatoid arthritis. Compared with 2003, there is no change in the 15 most common diseases but the sequences have changed with chronic diseases moving forward; Among the 15 most common diseases, in addition to colds and chronic obstructive pulmonary disease whose two-week prevalence rates have declined, the prevalence rates of all other diseases are generally higher.

(2) Onset of two-week morbidity: Among people who reported an illness in the previous two weeks, 32.1% had an acute illness within the period, 7.0% had an acute illness which started before the two weeks but continued during this period, and 60.9% had a chronic disease that continued in the two-week peiod.

Compared with the situation at ten years ago, there has been a major reversal in the structure of diseases in China's two-week morbidity rate. The proportion of chronic diseases has increased gradually in regard to two-week morbidity. The survey shows that there has been a rapid and contineous rise of chronic diseases sustained into the two-week period, from 39.0% in 1998 to 60.9% in 2008. The ratio of acute diseases in two-week morbidity has dropped from 61.0% in 1998 to 39.1% in 2008. There has been a major change in the proportion of acute and chronic diseases. The main cause of this change is the rapid increase of circulatory diseases (such as heart disease, cerebrovascular disease, hypertension, etc.), musculoskeletal diseases (such as intervertebral disc disease), and endocrine system diseases (mainly diabetes), while prevalence rate of respiratory disease has declined.

(3) Severity of illness: The average number of sick days in two weeks per 1,000 people surveyed is 1,537 days (1,842 days in urban areas, and 1,429 days in rural areas), the average bedridden rate in two weeks is 3.5% (2.9% in urban areas and 3.7% in rural areas), and the average off-work rate is 1.7% (1.0% in urban areas, 1.8% in rural areas). Compared with 2003, the sick days and bedridden days have both increased, and on the whole, the severity of disease from this survey is higher than that in 2003. However, the off-work rate, the number of days off-work of the labour force, the drop-out rate and the number of days drop-out of students have reduced. The number of days of illness of elderly population aged 65 and above is much higher than those of age groups below 65, and also much higher than that in 2003. Therefore, the increase in the severity of disease is mainly due to the increase of disease severity of the elderly population.

3. The prevalence of chronic diseases

The prevalence of chronic diseases among the surveyed population is 20.0% (28.3% in urban areas, 17.1% in rural areas), and compared with that in 2003 which was 15.1% (24.0% in urban areas, 12.1% in rural areas), the prevalence rates of both urban and rural residents have increased. Chronic diseases with the highest prevalence rates in cities are hypertension, diabetes, ischemic heart disease, cerebrovascular disease, and intervertebral disc disease. In rural areas, the sequence is hypertension, chronic gastroenteritis, rheumatoid arthritis, intervertebral disc disease, and chronic obstructive pulmonary disease.

(III) Residents' health service demands, utilization and expenditure

1. Outpatient visits and treatment

(1) Two-week morbidity: Among the patients covered by two-week morbidity investigation in the surveyed areas in 2008, 62.4% of them go to medical institutions, of which 39.1% did within the two weeks period, and 23.3% did before the period of two weeks but fell into it as the treatment process proceeded. 27.1% of them provide self-health care to themselves, and only 10.6% of cases do not receive any treatment.

(2) Two-week medical consultation rate: In the survey areas, the two-week medical consultation rate is 14.5% (12.7% in urban areas, 15.2% in rural areas), slightly higher than the 13.4% from 2003 survey (11.8% in urban areas, 13.9% in rural areas). In eastern, central and western rural areas, the rates are 15.9%, 13.9% and 15.5% respectively.

(3) The composition of treatment sites: In urban areas, 48.3% of patients went to primary health institutions (including urban community health centers and stations, township and village health services in rural areas, and clinics) and 50.3% go to hospitals at or above municipal level. In rural areas, 81.7% of patients went to primary health institutions, and 17.4% go to medical institutions at or above county level. Compared with the 36.6% in urban and 79.3% in rural from 2003 survey for people going to primary health institutions, there has been a trend of more first visits to primary health institutions among both urban and rural residents.

(4) The approaches of treatment: 93.6% of the outpatients during the two-week period take oral medication; the figure is higher in rural areas at 94.2% than that in urban areas at 91.5%. 26.2% adopt intramuscular injection, of which 30.4% in rural areas, far higher than in urban areas at 12.9%. 34.0% of the two-week outpatients receive infusion, of which 34.5% in rural areas, higher than the 32.2% in the cities.

(5) No treatment: The survey shows that among urban and rural patients, 37.6% of

them do not visit any health institutions (in urban areas 37.3%, in rural areas 37.8%). Compared with the figure from the 2003 survey at 48.9% (in urban areas 57.0%, in rural areas 45.8%), the rate has declined. The main reason for patients not going to health institutions is self-belief of slight illness, accounting for 36.4%, followed by economic difficulties and expensive treatment (collectively referred to as "economic reasons"), and both accounting for 24.4%. In comparison with the 2003 survey, the ratio of patients not receiving any treatment has declined.

(6) The ratio of self-medication and the reasons: 27.1% of the outpatients in the two-week period take self-medication, among them, 34.6% follow the previous doctor's prescription for self-medication, 34.8% feel their illness not heavy enough for seeing a doctor, and 23.7% are due to economic difficulties or expensive treatment (economic reasons).

(7) The ratio of untreated and why: 10.6% of the patients in the two weeks period do not receive any treatment, largely because of their self-belief of slight illness and economic difficulties, accounting for 45.5% and 29.2%. Those who believe there is no effective measures account for 11.9%, and 5.1% are due to they could not find time. Compared with that in 2003, the proportion of self-belief of slight illness has gone up 5 percentage points; however, the ratio of financial difficulties has declined by 9 percentage points.

2. Inpatient information of the surveyed population

(1) Hospitalization rate and the reasons: Hospitalization rate in the survey areas is 6.8% (7.1% in urban areas, 6.8% in rural areas). Compared with the 2003 survey which was 3.6% (4.2% in urban areas, 3.4% in rural areas), both urban and rural hospitalization rates have increased substantially, with the urban hospitalization rate increased by 69.0% and the rural doubled. Hospitalization rates in the eastern, central and western rural areas are 5.5%, 7.4% or 7.3%. The eastern rural area has a lower rate than the others.

71.4% (78.0% in urban areas, 69.0% in rural areas) of the surveyed residents are hospitalized because of illness, 16.5% (12.5% in urban areas, 17.9% in rural areas) come to hospitals for baby delivery, and 8.1% (4.9% in urban areas, 9.2% in rural areas) are due to injury or poisoning. In the rural areas, the proportion of injury and poisoning, and hospital deliveries are significantly higher than those in urban areas, but the proportion of being inpatients because of illness is lower. Compared with 2003, there has been an overall increase in the proportion of hospitalization due to illness, but for the other reasons, the proportion has declined slightly.

(2) The composition of hospitalization sites: In the cities, 46.6% of inpatients stay in provincial, municipal or prefectual level hospitals, 43.4% in district level hospitals and 6.7% in community health centers. In the rural areas, 36.6% stay in township

level hospitals, 50.0% in county level hospitals, and 10.6% in hospitals above county level. Compared with 2003, both urban and rural residents have had a higher hospitalization rate staying at health clinics, community health centers, and county-level medical institutions, while the proportion of inpatients staying in hospitals above prefectural and provincial levels has declined.

(3) Length of stay in hospitals and the proportion of surgical operations: The average days of hospitalization of patients discharged within one year before the survey is 11.8 (16.6 days in the cities, 10.1 days in rural areas), a slightly decrease compared with the 2003 survey. 29.0% of the inpatients have surgical operations (in urban areas 33.3%, in rural areas 27.5%). Compared with 2003, there is no significant change in cities but in rural areas there is a decline.

(4) Reasons for discharges from hospitals: Among all the discharged in the survey, 52.1% (54.4% in urban areas, 51.3% in rural areas) of them are discharged by their doctors after they have recovered from their illness, 7.2% (11.1% in urban areas, 5.8% in rural areas) are discharged by their doctors although they have not recovered yet, and 36.8% (29.6% in urban areas, 39.3% in rural areas) are discharged at their own requests. The proportion of self requests for discharge has decreased, comparing with the 43.3% (34.5% in urban areas, 47.0% in rural areas) in 2003. Among the inpatients asking for discharge by themselves, 54.5% (52.4% in urban areas, 55.1% in rural areas) are due to economic difficulties, or having spent too much (economic reasons). Compared with the figure of 2003 at 63.9% (53.0% in urban areas, 67.3% in rural areas), in general, the proportion of self-requesting for discharge due to economic reasons has declined.

(5) Should but failed to be hospitalized: There are 25.1% (26.0% in urban areas, 24.7% in rural areas) of patients who should be hospitalized but failed to. Comparing with the 29.6% (27.8% in urban areas, 30.3% in rural areas) from the 2003 survey, the ratios in urban and rural areas have decreased with the latter decreased more than the former.

In urban areas, people not coverred by any social health insurance has the highest rate or 36.8% of not being hospitalized, similar situation happens to the population with medical insurance for urban residents at a rate of 32.5%; In rural areas, the population coverred by the New Rural Cooperative Medical Scheme and those without any social insurance have a similar rate of not being hospitalized, both being the highest at 25%.

The main reasons for their not being hospitalized: 10.7% believe they don’t need to; 7.7% do not have time, 70.3% (67.5% in urban areas, 71.4% in rural areas) because of financial difficulties, and 11.3% for other reasons. Compared with the situation in 2003, there has been an increase in the proportion of not being hospitalized due to economic reasons in the cities, but a decrease in rural areas.

3. Medical expenidtures of the residents

(1) Out-patient expenditures: In 2008, the average medical expenditure per outpatient visit of urban and rural residents is 169 yuan (312 yuan in urban areas and 128 yuan in rural areas), higher than the 120 yuan in 2003 (219 yuan in urban areas and 91 yuan in rural aras). The median is 60 yuan (120 in urban areas, 50 yuan in rural areas), higher than the 33 yuan in 2003 (90 yuan in urban areas, 25 yuan in rural areas). With the inflation factors deducted, over the past five years, the average medical expense per outpatient and emergency visit has an annual increase of 3.25% (3.69% in urban areas, 3.29% in rural areas), which has significantly slowed down if compared with the 13.97% (12.94% in urban areas, 15.28% in rural areas) of the previous five years (1998-2003), and its increase rate is significantly lower than the growth rates of GDP and the per capita income of urban and rural residents.

(2) In-patient expenditures: The average inpatient expenditure of both urban and rural residents in 2008 is 5058 yuan (8958 yuan in the cities, 3685 yuan in rural areas), higher than the 3921 yuan (6930 yuan in urban areas, 2649 yuan in rural areas) in 2003. The median is 2,100 yuan (5,000 yuan in urban areas, 1,500 yuan in rural areas), higher than the 2003 survey at 1,600 yuan (3,375 yuan in urban areas, 1,100 yuan in rural areas). In accordance with the comparable price from the first survey in 1993, it is 2,643 (4,680 yuan in urban areas, 1,925 yuan in rural areas) in 2008, higher than the 2,441 yuan of 2003 (4,314 yuan in urban areas, 1,649 yuan in rural areas). The annual average growth for the past 5 years is 1.60% (1.64% in urban areas, 3.15% in rural areas), also significantly lower than the 10.45% (11.40% in urban areas, 11.56% in rural areas) of the previous five years.

(IV) The responsiveness of the health system and residents satisfaction

41.2% (43.5% in urban areas, 40.5% in rural areas) of the outpatients have expressed their dissatisfaction with medical institutions. In urban areas, the top 5 dissatisfied aspects are as follows: high medical expenditures (20.3%), long waiting times (9.1%), poor equipment and environment (7.5%), cumbersome prosedures (5.2%), and few species of pharmaceuticals (5.0%); In rural areas, the top 5 dissatisfied aspects are: poor equipment and environment (18.9%), high medical expenditures (13.3 %), few species of pharmaceuticals (8.6%), low level of technology (5.7%), and cumbersome procedures (3.7%).

44.2% (48.6% in urban areas, 42.6% in rural areas) of the inpatients have expressed dissatisfaction with medical institutions. The first 5 dissatisfied aspects for urban dwellers are: high medical expenditures (33.0%), cumbersome procedures (6.8%), unnecessary services (6.7%), long waiting times (5.4%), and poor equipment and environment (5.0%); The first 5 dissatisfied aspects for rural residents are: high medical expenditures (24.8%),poor equipment and environment (12.2%), cumbersome procedures (7.8%), poor attitudes (4.2%), and low level of technology (4.0%).

(V) Major health behaviors

1. Smoking

Among the surveyed population aged 15 and above, 25.1% (22.5% in urban areas, 26.0% in rural areas) are smokers, slightly lower than the figure in 2003 at 26.0% (23.9% in urban areas, 26.8% in rural areas); Male smokers account for 48.0% (43.8% in urban areas, 49.6% in rural areas), slightly lower than that in 2003 at 48.9% (45.4% in urban areas, 50.2% in rural areas), while female smokers account for 2.6% (2.8% in urban areas, 2.6% in rural areas), lower than the figure in 2003 at 3.2% (3.6% in urban areas, 3.0% in rural areas). The smoking rate of male in urban areas is lower than that in rural areas, however, for women it is the opposite.

Smokers start smoking at an average age of 21.6 (21.3 for men, 26.5 for women). There has been a trend of starting younger in average for smoking. 77.5% of the surveyed smokers started smoking between 15-24 years of age, while the proportions from 2003 and 1998 surveys were 75.4% and 60.3%. The average daily amount of smoking is 17.9 cigarettes (15.6 in urban areas, 18.6 in rural areas), of which, male smokers have 18.1 cigarettes a day, and female smokers 14. The rate of heavy smokers who smoke 20 cigarettes a day or more has increased from 51.3% in 2003 to 61.6% in 2008.

In average, smokers spend 112 yuan (154 yuan in cities and 98 yuan in rural areas) on cigarettes for themselves monthly. The average monthly spending for men is 120 yuan (166 yuan in urban areas, 105 yuan in rural areas), and that for women is 69 yuan (93 yuan in urban areas, 58 yuan in rural areas).

2. Alcohol consumption

Among the residents aged 15 and above, 87.5% (89.4% in urban areas, 86.7% in rural areas) of them do not drink alcohol or just have a little; 8.6% (6.8% in urban areas, 9.3% in rural areas) drink regularly, among them males account for 16.1%, and females 1.2%. For different age groups, the 45-54 age group has the highest rate of frequent alcohol comsumption, up to 22.8%. The 15-44 age group has a larger proportion of people drink regularly as they get older, while the age group above 55 sees a decrease of alcohol drinking over their ages.

3. Physical exercises

Among the surveyed population aged 15 and above, 21.9% (49.6% in urban areas, 11.0% in rural areas) of them do physical exercises regularly at their leisure time. Compared with the figure in 2003 at 14.6% (36.2% in urban areas, 6.2% in rural areas), the number has increased. As for the reasons of not doing physical exercises,

half of the respondents in urban areas say they are “lack of time”, and another 17% of the respondents are “not willing to”. In rural areas, 62% of the respondents say what they engage are physical labor itself, while 19% of them think there is no time for doing so. 65.8% of the respondents do physical exercises such as walking, jogging, and Tai-chi, and 14.4% of them play ball games. On average, people spend about 47 minutes (54 minutes in the cities, 34 minutes in rural areas)at each exercise session.

4. Physical examinations for people aged 35 and above

Among people aged 35 and above in the surveyed areas, the proportion of receiving physicial examinations accounts for 18.8% (31.7% in urban areas, 13.4% in rural areas), of which, male at 18.2% (32.4% in urban areas, 12.5% in rural areas), and female at 19.4% (31.1% in urban areas and 14.4% in rural areas). The proportion of health examination increases with the increment of age, educational level and incomes.

5. Blood pressure measurement and health advices for people aged 35 and above

Among people aged 35 and above, the proportion of taking blood pressure measurement within a year accounts for 49.1% (65.3% in urban areas, 42.4% in rural areas). 73.3% (69.6% in urban areas, 76.3% in rural areas) of the hypertensive patients have received health advices within 3 months, and 64.6% (64.8% in urban areas, 64.5% in rural areas) of them have their blood pressure measured and also have received health advices on hypertension prevention and control within 3 months.

6. Health education and its channels

78.6% of the population aged 15 and over regard TV as one of the main channels for health knowledge access, followed by physicians’ advices which account for 47.0%, and publications at 28.2%. The sequences of channels for health knowledge access have a slight difference between urban and rural areas: the sequence for urban residents is watching television, reading newspaper, magazines and books, and asking doctors for advice, accounting for 83.5%, 53.8% and 39.8% respectively. For rural residents, the sequence is watching television, asking doctors for advice, and reading newspaper, magazines and books, accounting for 76.6%, 49.7% and 18.3% respectively.

7. Publicity on AIDS prevention and control

80.4% (93.2% in urban areas, 75.5% in rural areas) of the survey population aged 15 and up have heard of AIDS, 58.4% (80.3% in urban areas, 49.9% in rural areas) of them are aware of its blood transmission route, 57.1% (78.1% in urban areas, 48.9% in rural areas) know about its sexual transmission route, and 40.5% (58.6% in urban

areas, 33.4% in rural areas) of them know about its mother to child transmission route.

(VI) Maternal and child health care

1. Women's health examination

46.9% (57.0% in urban areas, 43.9% in rural areas) of married women at childbearing age between 15-49 years old conducted gynecological examination (not including disease treatment and maternal health) within one year before the survey. With the increase of educational and income levels, married women at childbearing age between 15-49 years old have a gradually higher proportion of gynecological examinations. Compared with 2003, the proportion of gynecological examination, especially in rural areas, has been significantly improved.

2. Maternal health

94.4% (97.6% in urban areas, 93.7% in rural areas) of pragnant women receive one or more prenatal examinations, significantly higher than that in 2003 at 87.8% (96.4% in urban areas, 85.6% in rural areas), especially in the rural areas. The early pregnancy examination rate is 65.2% (73.8% in urban areas, 63.2% in rural areas), also significantly higher than that in 2003 at 51.0% (67.3% in urban areas, 46.8% in rural areas). Prenatal examination rate decreases with the decline of regional economic levels. 53.6% of pregnant women in urban areas receive 8 or more prenatal checkups, while in rural areas, 43.9% of pregnant women receive 5 or more times. At prenatal examinations, 57.8% (88.1% in urban areas, 50.4% in rural areas) have the following four items measured or tested including body weight, blood tests, blood pressure, and urine routine examination.

The proportion of parturients received one or more post-natal examination or visit is 55.6% (61.0% in urban areas, 54.3% in rural areas), slightly higher than the figure in 2003 which is 53.3% (59.6% in urban areas, 51.7% in rural areas), but still at a relatively low level.

3. Delivery sites and the reasons for home deliveries

Hospital delivery rate in cities is 95.1% (59.7% in hospitals, 27.7% in maternal and child health institutions, and 7.7% in community or township clinics). The rate in rural areas is 87.1% (40.3% in hospitals, 15.3% in maternal and child health institutions, 30.4% in clinics, and 1.1% in community health centers). Compared with the 2003 figures at 92.6% in urban areas and 62.0% in rural areas, hospital delivery rate has increased, particularly in rural areas which has increased significantly.

A total of 17 parturients gave birth at home in the surveyed urban areas. 8 of them for doing so are because they were in financial straits; 5 of them are because it had been too late to go to a hospital (partus precipitatus) ; 2 of them believe there is no need to go to a hospital and the other two are because of other reasons. In rural areas, 9.9% (582) of parturients give birth at home and their main reasons for not going to hospitals are in the following sequence: it has been too late (partus precipitatus, 43.0%), no need (21.4%), and in financial straits (19.9%). Compared with the 2003 survey, the proportaions for the latter two reasons have decreased, while that for the former has increased.

4. Modes and costs of childbirth

According to this survey, the proportion of natural delivery is 71.0% (47.6% in urban areas, 76.5% in rural areas), cesarean section accounts for 27.2% (51.1% in urban areas, 21.6% in rural areas), and vaginal delivery accouns for 1.8% (1.4% in urban areas, 1.9% in rural areas). The proportion of cesarean section has increased along with the scale-up of urbanization and socio-economic development in rural areas. In particular, the rate of cesarean section in large cities is as high as 63.0%. Compared with the finding from the 2003 survey, the proportion of cesarean section has increased by 11.3%.

In the survey areas, the average costs of natural delivery, vaginal delivery and cesarean section are 1,135 yuan (2,253 yuan in the cities, 957 yuan in rural areas), 1,257 yuan (2,072 yuan in urban areas, 1,122 yuan in rural areas), and 3,678 yuan (4,584 yuan in the cities, 3,153 yuan in rural areas) respectively. The average costs of delivery in hospitals, maternity and child health institutions, and clinics or community health centers are 2,366 yuan (3,568 yuan in the cities, 1,947 yuan in rural areas), 2,255 yuan (3,698 yuan in urban areas and 1,636 yuan in rural areas), and 991 yuan (2,486 yuan in urban areas and 915 yuan in rural areas). Compared with the 2003 survey, there has been a sharp increase in the average costs of childbirth at all locations. And the average cost of childbirth in hospitals and maternity and child health institutions at county level and above, has risen by nearly 600 yuan.

5. Gestational weeks and birth weight

The average gestational age of maternal delivery is 39.5 weeks. The rate of preterm infants (gestational age <37 weeks) is 4.9% (8.4% in urban and 4.1% in rural areas), with the proportion in cities significantly higher than that in rural areas. The mean birth weight of liveborn is 3,300 grams. Low birth weight (birth weight less than 2,500 grams) has a ratio of 2.7% (2.1% in urban areas and 2.8% in rural areas). The proportion of low birth weight increases with the scale-up of cities and the decline of socio-economic level in rural areas. Compared with the previous three national health services surveys, this survey sees a decrease of low birth weight rate in both urban

and rural areas.

6. Children's physical examination rate

The rates of children's physical examinations at different age groups are as follows: 0-year-old group at 57.7% (78.9% in urban areas, 53.4% in rural areas), 1-2 years-old group at 56.6% (74.2% in urban areas, 53.0% in rural areas), and 2-3 years-old group at 56.0% (77.7% in urban areas, 51.8% in rural areas). Child health care compliance rates of different age groups are: 0-year-old group at 22.8% (29.8% in urban areas, 21.4% in rural areas); 1-year-old group at 39.3 % (50.0% in urban areas, 32.3% in rural areas); and 2-3 years-old group at 56.0% (77.7% in urban areas, 51.8% in rural areas).

7. The Expanded Program on Immunisation (EPI)

Based on the responds from surveyed parents, 97.9% (98.4% in urban areas, 97.8% in rural areas) of children have register with EPI. In 2003, the figure was 88.8% (94.7% in urban areas, 87.3% in rural areas), and therefore the proportion of children with EPI cards based on their parents responds has substantially increased. This is especially true in rural areas which has increased by 10.5%.

By reviewing the EPI cards, inquiring the parents and examining the inoculation scars on children, the performance of EPI inoculation is verified. In the surveyed areas, the vaccination rates of BCG, DPT, poliomyelitis, measles and hepatitis B are 98.8% (99.6% in urban areas, 98.6% in rural areas), 90.7% (84.0% in urban areas, 92.0% in rural areas), 92.4% (86.0% in urban areas, 93.7% in rural areas), 92.1% (93.6% in urban areas, 91.8% in rural areas), and 93.3% (90.9% in urban areas, 93.8% in rural areas) respectively. Compared with those in 2003, in addition to measles vaccination rate which has declined the other vaccination rates have all increased significantly. The vaccination rates of DPT, poliomyelitis and hepatitis B in rural areas are higher than those in urban areas.

8. Breast-feeding

According to the survey, 27.0% of the live births were breast-fed for the first time within half an hour after they were born, 41.5% between half an hour and 24 hours, 27.7% after 24 hours, and 3.9% of them were never breast-fed. For the 0-6 month age group, the exclusive breast-feeding rate is 27.6% (15.8% in urban areas, 30.3% in rural areas). For the 6-9-month age group, the complementary feeding rate is 43.3% (37.5% in urban areas, 44.6% in rural areas). For the 12-15 months age group, the continued breast-feeding rate is 37.0% (15.5% in urban areas, 41.8% in rural areas).

(VII) Control of key diseases

1. Hypertension

Among the population over 35 years old in the surveyed areas, the hypertension prevalence rate is 93.9‰ (154.2‰ in the cities, 68.9‰ in rural areas); the two-week morbidity rate of hypertension is 53.8‰ (93.2‰ in urban areas, 37.4‰ in rural areas); the two-week medical consultation rate for hypertension is 21.2‰ (29.6‰ in urban areas, 17.7‰ in rural areas), the two- week hypertension treatment cost per out-patient is 156 yuan (222 yuan in the cities, 111 yuan in rural areas); the annual hospitalization rate for hypertension is 5.5‰ (7.1‰ in urban areas, 4.8‰ in rural areas), and the cost per in-patient is 3776 yuan (6640 yuan in the cities, 1922 yuan in rural areas).

2. Diabetes

Among the population over 35-year-old, the prevalence rate of diabetes is 18.3‰ (41.8‰ in urban areas, 8.5‰ in rural areas); the two-week morbidity rate of diabetes is 10.2‰ (23.6‰ in urban areas, 4.6‰ in rural areas); the two-week medical consultation rate for diabetes is 5.0‰ (11.7‰ in urban areas, 2.2‰ in rural areas); the treatment cost per out-patient is 374 yuan (467 yuan in the cities, 171 yuan in rural areas); the annual hospitalization rate for diabetes is 2.6‰ (5.9‰ in urban areas, 1.2‰ in rural areas); and the cost per inpatient is 6581 yuan (8352 yuan in the cities, 3548 yuan in rural areas).

3. Tuberculosis(TB)

The TB prevalence rate is 273.2/100,000 (204.3/100,000 in the cities, 297.7/100,000 in rural areas). The treatment rate for TB patients is 89.7% (87.4% in urban areas, 90.3% in rural areas). Reasons for TB patients untreated are: 10.0% of them because of the adverse effects of medication, 25.0% of them due to unaffordability, 20.0% of them are not aware of free treatment, and 5.0% of them because of inconvenience.

4. Injury

Based on the number of people, the 2008 survey finds that in the surveyed areas and within one year, the rate of serious injury is 23.5‰ (18.8‰ in urban areas, 25.1‰ in rural areas); while counted by person time, the figure is 28.3‰ (23.2‰ in urban areas, 30.1‰ in rural areas). The main reasons for serious injury are falls, traffic accidents and animal bites, which accounting for 45.9%, 15.5%, and 13.0% respectively out of the total. The main venues where injuries occurred are roads, living and working places, accounting for 33.6%, 33.0% and 21.4% respectively. The two-week incidence rate of injury and poisoning is 5.6‰ (4.4 ‰ in urban areas, 6.0‰ in rural areas),

higher in male at 6.5 ‰ than female at 4.7‰, and the prevalence increases with age. The cost per outpatient is 346 yuan (467 yuan in urban areas and 314 yuan in rural areas). The hospitalization rate for injury or poisoning is 6.2‰ (4.4‰ in urban areas, 6.8‰ in rural areas), and the relevant cost per inpatient is 7,171 yuan (9,165 yuan in the cities, 6,716 yuan in rural areas).

(VIII) The focused elderly population aged 60 and above

1. The general features of the elderly population

According to this survey, the proportion of elderly population aged 60 years and above is 16.7%, 48.9% of them are men and 51.1% women. In urban areas, 64.9% of the elderly enlist with the Basic Medical Insurance for Urban Employees, and 7.6% with the Basic Medical Insurance for Urban Residents; 13.7% of them are not covered by any social medical insurance. In rural areas, 89.1% of the elderly are covered by the Rural Cooperative Medical Scheme; 6.1% of them are not covered by any social medical insurance.

2. The health status of the elderly population and their health service needs

The two-week morbidity rate of the elderly population is 43.2% (53.4% in urban areas, 37.8% in rural areas), and their chronic disease prevalence rate is 43.8% (53.2% in urban areas, 38.9% in rural areas). In urban areas, the top five chronic diseases with the highest prevalence rates among the elderly are, as in the following sequence, hypertension, diabetes, ischemic heart disease, cerebrovascular disease, and chronic obstructive pulmonary disease; Those in rural areas are hypertension, rheumatoid arthritis, cerebrovascular disease, chronic obstructive pulmonary disease, and gastroenteritis. In terms of disability, 4.0% of the elderly are bed-ridden; 7.3% of them feel difficult to hear clearly; 14.5% of them have difficulty in speaking; 4.3% of the elderly have extreme visual impairment. The ratios of the elderly in need of daily life care in urban and rural areas are 14.1% and 12.8% respectively.

3. Health service demands and utilization

For the aged people with illness, 27.4% of them visit a doctor within a period of two weeks, 31.8% of them have their treatment suspended into the two weeks period, 31.2% of them adopt self-medication, and 9.7% of them do not take any actions for treatment. Among the elderly population, the two-week medical consultation rate is 28.3% (28.1% in urban areas, 28.4% in rural areas); the untreated rate is 37.0% (33.1% in urban areas, 39.9% in rural areas); the hospitalization rate is 13.8% (17.2% in urban areas, 12.0% in rural areas); and the proportion of those should but failed to be hospitalized is 23.9% (20.4% in the cities, 26.3% in rural areas).

4. Sources of income, care and social activities

In urban areas, the first and foremost source of income for the elderly is themselves or their spouses (83.5%); while in rural areas, it is their children and grandchildren (53.9%). When the elderly are to be taken care of, 59.5% of them are taken care by their children or grandchildren and 36.2% by their spouses. In urban areas, 76.1% of the elderly say they have weekly interaction with their neighbors; however, the ratio of keeping weekly interaction with their relatives and friends is only 26.0%; 61.7% of the elderly basically do not participate in any social gatherings.

(IX) The low-income population

1. General features of the low-income population

50% of the median income or average income of a country or territory is used as the low-income line. Accordingly, the proportion of low-income population in the surveyed areas is 13.2 % (14.9% in urban areas, 12.6% in rural areas) of the total population. Among the low-income population, women account for 51.2%, the elderly population aged 65 and above account for 17.7%, and those not covered by any social medical insurance are 18.1% (39.8% in urban areas, 9.0% in rural areas).

2. Health service needs

Among the low-income population, the two-week prevalence rate is 21.8% (21.2% in urban areas, 22.0% in rural areas); and the prevalence of chronic diseases is 24.3% (27.2% in urban areas, 23.1% in rural areas).

3. Health service demands and utilization

Among the low-income population, the two-week medical consultation rate is 15.5% (11.7% in urban areas, 17.0% in rural areas). As for the sites of first outpatient visits of the low-income population: 29.6% of urban residents or 58.6% of rural residents go to local clinics, these ratios are higher than that of the whole population; for those going to medical institutions at county level and above, 49.4% are from the cities and 16.1% rural areas, and these ratios are lower than that of the whole population. Among the low-income patients, the proportion of not taking any treatment measures within two-weeks accounts for 13.4% (8.8% in urban areas, 15.3% in rural areas). Unaffordability is the main reason for this, which accounts for 45.8% (43.9% in urban areas, 46.3% in rural areas).

The hospitalization rate of the low-income population is 5.9% (5.8% in urban areas, 5.9% in rural areas). 35.5% of the low-income population (37.6% in urban areas, 34.6% in rural areas) should be hospitalized but failed to, 83.9% (89.1% in urban

areas, 81.5% in rural areas) of them are because they could not afford it. Compared with the whole population, these rates of 89.1% in urban areas and 81.5% in rural areas are 21.6% and 10.1% higher respectively.

4. Medical expenditures

The average out-patient expenditure of the low-income population per person time is 210 yuan (356 yuan in urban areas and 168 yuan in rural areas), and the average in-patient expenditure is 4,726 yuan (8,163 yuan in urban areas, 3,506 yuan in rural areas). The average household health care expenditure is 1,404 yuan (1,672 yuan in cities, 1,289 yuan in rural areas), which accounts for 17.5% (14.3% in urban areas, 20.1% in rural areas) of the total consumption expenditure. The incidence of disastrous health expenditures of the low-income households in urban and rural areas are 5.9% and 10.2% respectively.

(X) Social health insurance and the utilization of medical service

1. The status of insurance coverage

As of June 2008, 87.1% (71.9% in urban areas, 92.5% in rural areas) of residents are covered by government- or collective-run health insurance. In the urban areas, the coverage rates of the Basic Medical Insurance for Urban Employees and the Basic Medical Insurance for Urban Residents are 44.2% and 12.5% respectively; The coverage rate of the New Rural Cooperative Medical Scheme for rural residents has reached 93.0%.

2. Basic Medical Insurance for Urban Employees

Among the insured population, male accounts for 52% and female 48%. The two-week prevalence rate is 28.6%, the two-week medical consultation rate is 14.5%, and the two-week rate of untreated patients is 33.4%. The proportion of self-medication is 27.4%, and 6.0% is untreated. 43% of people with insurance go to primary health institutions for their first outpatient visits, and the proportions of visiting dictrict-level hospitals and municipal hospitals or above account for 27% and 29%. The average expenditure for first outpatient visit is 350 yuan. Among the expenses of the two-week treatment cases, 41.1% is paid by the individual accounts, 27.9% are partially reimbursed, 4% are fully reimbursed and 26.3% of the outpatient expenses are fully out-of-pocket expenditure. 35.8% of the outpatients are dissatisfacted with what they have experienced, and the main reasons of such dissatisfaction are the high costs of medical care, long waiting time and poor medical equipment.

Among the insured, the annual hospitalization rate is 9.2%. 87.7% of those being hospitalized are due to illness and injury, and this accounts for 8.3% in the

hospitalization rate. As for the sites of hospitalization: most of the patients stayed at district-level medical institutions, followed by health institutions at municipal and the provincial levels. Only 5.4% of them stayed in community health service centers. The average inpatient expenditure per time is 10,783 yuan, and the average daily expenditure is 560 yuan. 94.8% of the inpatient medication expenses can be reimbursed through health insurance, and 63.2% of the hospital charges are reimbursed. The out-of-pocket inpatient payment per capita is 4,069 yuan, which accouts for 31.8% of the per capita annual income of the insured households. 33.2% of the inpatients have expressed dissatisfaction with various experiences while staying in hospitals, among them, most complaints, which accounts for 23.2%, are the high cost of medical care. 23.9% of the insured should have been hospitalized but failed to.

3. Basic Medical Insurance for Urban Residents

Among the insured population, male accounts for 44.8%, and female 55.2%. The two-week prevalence rate, medical consultation rate and treatment rate are 14.6%, 10.5%, and 58.0% seperately. The proportion of self-medication is 35.5%, and 6.4% are untreated. 50.9% of people with this insurance go to primary health institutions for their first outpatient visits, and the proportions of visiting dictrict-level hospitals and municipal hospitals or above account for 27% and 20.1%. The average expenditure per first outpatient visit and per treatment are 242 yuan and 415 yuan respectively. 34.6% of the outpatient expenditures are reimbursed.

Among the insured, the annual hospitalization rate is 5.1%, of which 82.3% of the inpatients are hospitalized due to illness and injury, and illness accouts for 4.3% in the total insured. The mostly used inpatient hospital sites are medical institutions at district-level and above, of which 48.3% at district-level, and 44.0% at provincial and municipal levels. The inpatient expenditure per capita per time is 5,020 yuan, and the average daily hospital charge is 409 yuan. Nearly 80% of the inpatient expenditures could be reimbursed, accounts for 49.3% of the total hospitalization expenses. The out-of-pocket inpatient costs after deducting the reimbursed part is averaged at 3,522 yuan, accounts for 38.2% of the annual income per capita of the insured household. Those shall be hospitalized but failed to has a rate of 25.9%, of which 84.8% of patients are not hospitalized because they could not afford.

4. New Rural Cooperative Medical Scheme (NCMS)

The two-week prevalence rate of farmers covered by NCMS from the 2008 survey is 16.1%, the two-week medical consultation rate is 14.6%; and the two-week untreated prevalence rate is 37.7%, of which, more than half of the untreated patients take measures for self-treatment, and those without any treatment at all account for 12.7%. The most common reasons for the untreatment is patients’s self-inductance of not serious, followed by unaffordability. For the two-week outpatients covered by

NCMS, township and village medical insittutions are where they mostly first visit, accounts for 82.6%; followed by county level, municipal level and provincial level hospitals at 14.8% , 1.2%, and 0.6% respectively. Compared with the figures from 2003, the first visit sites are more grass-roots oriented. The outpatients covered by NCMS have a per capita expenditure of 163 yuan. Among the two-week treatment cases, 14.1% of the outpatient expenditure are paid by the individual accounts, 18.5% are partially reimbursed, 0.9% of patients have their claims all met, and 66.6% of the cases are fully paid by patients themselves. 37.8% of the outpatients are dissatisfacted with certain experiences, mostly because of the poor equipment, high cost, and few choices of medicines.

The annual hospitalization rate of those covered by NCMS is 6.5%. 78.1% of the inpatients are hospitalized due to illness and injury, and this is 5.3% of the total insured. In terms of hospitalization sites, township and town clinics account for 41.0% of the total, county-level hospitals account for 44.8%, municipal hospitals 7.1% and provincial hospitals 4.3%. The inpatient expenditure per capita per time is 3,412 yuan, and the average daily inpatient charge is 312 yuan. Nearly 80.2% of the inpatient expenditures could be reimbursed, accounts for 26.6% of the total hospitalization expenses. The out-of-pocket inpatient costs per capita is averaged at 2,503 yuan, accounts for 56.0% of the annual income per capita of the insured household. Compared with the situation in 2003, inpatient satisfaction rate has been improved significantly, and the unsatisfaction rate has decreased from the 72.4% in 2003 to 49.7%. Out of the reasons of dissatisfaction, high cost has declined from the 54.3% in 2003 to 29.7% in 2008. 27.9% of patients should have been hospitalized but failed to.

III. Major findings of this survey and policy recommendations

(I) Major progress

1. There has been a remarkable increase in health service needs from Chinese residents and an accelerated transformation of health model.

Over the past five years, following China's rapid economic and social development, there has been an accelerated process in urbanization and aging of population, and a remarkable increase in health service needs from both urban and rural residents. The two-week prevalence rate, which reflects the requirements of residents for medical and health services, has stepped up from 13.0% to 18.9 %, and the prevalence of chronic diseases from 15.1% to 20.0%. Based on the census of 2008 (13.3 million), the number of two-week illness cases is estimated at 6.54 billion nationwide, 1.46 billion more than that of 2003; and the number of chronic disease cases is about 270 million, 70 million more than that of 2003. Analyses show that the main reasons for rapid growth of health service needs from both urban and rural residents are the growth of both elderly population and the illness cases of them. By the end of 2008,

China's population over the age of 60 has reached 160 million[1], the two-week prevalence rate has increased from 32.1% of 2003 to 43.2% of 2008, the chronic disease prevalence rate from 38.2% to 43.8%, higher than those of other age groups both in terms of prevalence rate and incremental rate.

The survey finds that there has been a remarkable change in the sickness structure of Chinese residents: the rates of infection and acute diseases have significantly decreased while those of chronic and non-communicable diseases rised rapidly. From the structural analysis of two-week prevalence of diseases, within two weeks, the proportion of emerging diseases has decreased from 61% in 1998 to 39%, while the rate of diagnosed chronic disease cases continued in the two-week time peiod has increased from 39% to 61%, of which: circulatory system diseases (such as hypertension, heart disease, cerebrovascular disease, etc.), locomotor system diseases (such as intervertebral disc disease), endocrine system diseases (such as diabetes) have increased rapidly, while respiratory and digestive diseases are gradually declining. According to the national population, it is estimated that the cases of diagnosed circulatory diseases has reached from 37 million of 1993 to 111 million (of which, hypertension increased from 14 million patients to 71 million, and cerebrovascular diseases from 5 million to 13 million), and cases of diagnosed diabetes have increased from 2 million to 14 million. Analysed by diseases, hypertension, diabetes and ischemic heart disease have become the most common chronic diseases for urban residents, and there is an increasing trend in rural areas of these three diseases.

The survey shows there is an increase in burden of disease. In the surveyed areas, the number of days diseases continue within two weeks per thousand population is 1,537 days, the number of days in bed due to illness per thousand population is 185 days, the number of absent days on sick leave per thousand working population is 90 days and the number of absent days on sick leave per thousand students is 44 days. Compared with the findings from the 2003 survey, the former two numbers of days above have increased and the latter two have declined.

2. Primary health service systems in both urban and rural areas have been upgraded, and people's access to health services and their utilization of primary health facilities have increased.

Since 2005, governments at all levels have arranged a total of 21.7 billion special fund for the construction of primary health care in urban and rural areas. 22,000 primary health facilities in rural areas and 24,000 community health services in urban areas have been established under this fund, as a result, the capacity of primary health care services and the accessibility of residents to medical services have been greatly enhanced.

[1] Data source：Statistical Communique on 2008 National Economic and Social Development, National Statistics Bureau

The survey finds that the physical accessibility of rural and urban residents to health services has been enhanced. 93.5% of households in urban areas dwell within two kilometers away from medical institutions, 97.1% of households can reach their nearest medical institutions within 20 minutes; 75.9% of households in rural areas are less than 2 kilometers away from a medical service, and 85.4% of households can reach a nearest medical service within 20 minutes.

The survey has also found that in both urban and rural areas, there is a different flow of patients for medical treatment: the primary care health facilities have been much widely used. Judging by the two-week inpatient composition, it can be seen that the proportion of inpatient at rural (neighborhood and residents committee) health services has increased from 69.5% in 2003 to 73.7% in 2008, of which: it increased from 36.6% to 48.3% in urban areas and from 79.3% to 81.7% in rural areas.

3. The utilization of health services by both urban and rural residents has reached a historically high level, and the fast-growing trend of medical costs is under control.

There is an ascending trend in utilization of outpatient and inpatient health services by both urban and rural residents, which has reached a record high. The survey shows that both the two-week medical consultation rates of urban and rural residents have reached 14.5% and the annual hospitalization rate 6.8%, nearly doubled of those in 2003. Based on the national population, the total number of outpatients is estimated at 5.01 billion nationwide in 2008, 260 million more than that in 2003, while the number of inpatients at 92 million, 45 million more after 5 years. Apart from the increase in health services requirements and enhancement of primary health services, the increased use of medical services is also because income levels of urban and rural residents have rised, the health insurance coverage is enlarged and the ever increasing medical expendure is under preliminary control.

The survey shows that the rapid growth of medical expenditure from urban and rural residents has been basically under control. Over the past five years, according to comparable prices, the annual expenditure per outpatient visit has a growth rate of 3.7% in urban areas and 3.3% in rural areas. The annual inpatient expendire per time increased at a rate of 1.6% in urban areas and 3.2% in rural areas. Compared with 1998-2003 (the annual outpatient expenditure increased by 12.9% in urban areas and 15.3% in rural areas; the annual inpatient expenditure increased at a rate of 11.4% in urban areas and 11.6% in rural areas), the growth rate has been significantly reduced.

In 2008, the per capita disposable income of urban residents in China is 15,781 yuan, and the per capita net income of rural residents reached 4,761 yuan. After adjusting for price rises, over the past five years, the annual income of urban and rural residents increased by 6.4% and 6.1% respectively. Thus, in the past five years, the increments of both outpatient and inpatient expenditures of urban and rural residents were significantly lower than the growth rate of real income. This reflects that the actual

payment capability of the urban and rural residents for medical expenses has been increased.

4. The preliminary formed medical security system for urban and rural residents, and the further expanded social health insurance have steadily made the benefit level of residents increased.

The basic medical insurance system for urban and rural residents is formed by the Basic Medical Insurance for Urban Employees, the Basic Medical Insurance for Urban Residents, the New Rural Cooperative Medical Scheme and the Medical Aid System for Urban and Rural Residents. The survey finds that 87.1% of the urban and rural residents in China are insured, three times more than that in 2003. 71.9% of the urban population have access to various kinds of medical insurances, of which: 44.2% are covered by the basic medical insurance for urban employees, and 12.5% by the basic medical insurance for urban residents. In the rural areas, 92.5% have access to a variety of medical insurance, of which: 89.7% of the surveyed residents are covered by the new rural cooperative medical scheme.

Among those covered by the basic medical insurance for urban employees, 73.7% of their outpatient expenses are reimbursed or paid by their personal accounts, 94.8% of their inpatient expenses are reimbursed. Their average reimbursed hospitalization cost is 6,988 yuan, or 63.2% of the total expenditure, significantly higher than that in 2003.

Most of the reimbursement of the basic medical insurance for urban residents are inpatient claims. In some areas, outpatient expenses are partially reimbursed. Among the insured, about one-third of the outpatient and emergency expenses are reimbursed. 79.2% of inpatients have their claims met, with an average reimbursement of impatient cost at 3,425 yuan, or 49.3 % of the total.

Among those enlisted in the new rural cooperative medical scheme, 33.4% of outpatient expenses are reimbursed (or paid by households accounts); 83.7% of the inpatients expenses are reimbursed, with the average per-inpatient reimbursement at 1,130 yuan, accounting for 33.7% of the total hospitalization charges. The new rural cooperative medical scheme has, to a certain extent, helped alleviate the poor accessbility and unaffordability of farmers to medical services. In view of patients discharged from hospitals, the proportion of self-requesting discharges has declined from 51.5% to 43.4%, and that due to unaffordability has decreased from 73.1% to 38.0%.

5. The Expanded Program on Immunisation (EPI) maintains at a high level, works on maternal and child health (MCH) and disease prevention and control have been further improved.

The survey shows that 97.9% children in urban and rural areas are registered with the program on immunization, significantly higher than that in 2003 at 88.8%. The actual

coverage rates for children of the five vaccines are all above 90%. Compared with those in 2003, the immunization coverage rates of BCG, DPT, poliomyelitis, and hepatitis B in particular, have significantly expanded, of which, the coverage rates of DPT, poliomyelitis, and Hepatitis B vaccination in rural areas are higher than those in urban areas.

The past five years have witnessed a declination of China's maternal mortality rate from 51.3/100,000 to 34.2/100,000, and a drop of infant mortality rate from 25.5‰ to 14.9‰. Such improvements are of significant correlation with the enhancement of work on MCH. According to the survey, the prenatal examination rate is 94.4% (97.6% in urban areas, 93.7% in rural areas), 6.6 percentage points higher than that in 2003; the rate of first trimester prenatal examination is 65.2% (73.8% in urban areas, 63.2% in rural areas), 14.2 percentage points higher than that in 2003; and the hospital delivery rate is 88.6% (95.1% in urban areas, 87.1% in rural areas), 20.3 percentage points higher if compared with 2003.

There has been an improvement in safe drinking water in both urban and rural areas. 98.2% of urban households have access to safe drinking water. The rate of safe drinking water in rural areas is 85.8%, while the accessibility of tap water in rural areas has reached 41.9%, significantly higher than the 80.2% and 34.0% in 2003.

Conditions of urban toilets have been increased, the proportion of flush toilets is 85.9%, 79.1% higher than that in 2003. The coverage of harmless disposal household latrines in rural areas has reached 20.6%, similar to that in 2003; the coverage of sanitary latrine has increased over 2003, reaching 43.3%, but more than half of households still use unhygienic latrines, particularly in less developed rural areas classified as the third or fourth rural regions. Latrine retrofitting is still an arduous task.

According to the survey, 49.1% of people over 35 years of age have their blood pressure measured over the year, and the rate for those aged 60 and above is 63%. The rate of having blood pressure measured is significantly higher in urban areas than in rural areas, and the poorer, the lower the rate. 64.6% of hypertensive patients had their blood pressure measured and received advice from their doctors within the three months before the survey.

(II) Major problems and challenges

1. Chronic non-communicable diseases are expanding rapidly, major risk factors have not been effectively controlled.

The past five years have seen a rapidly rising prevalence of chronic diseases among Chinese residents. In 2008, diagnosed chronic disease in China had a total number of 270 million cases, with an annual increase of 6.2%. At present, among the causes of death, 82.5% of the deceased died of chronic diseases, and 10.1% of the deceased

died from injuries and poisoning[2]. Compared with the findings from the second National health services survey in 1998, the cases of diagnosed hypertension and diabetes have increased by two times, and the cases of heart disease and cancer have increased by nearly one-fold. Chronic diseases have brought about tremendous economic burdens to the state, society, families and individuals.

Health-related behaviors and lifestyles are important factors that affect chronic disease occurrence and development. The survey shows those urban and rural residents' health-related behaviors and lifestyles (such as smoking, alcohol consumption, physical activity, etc.) are gaining ground as compared with the previous survey findings. For example, smoking and alcohol consumption rates have been declining, and the rate of physical exercise is gradually increasing. However, these risk factors have not been effectively controlled. Although the smoking rate has dropped to a certain extent, for instance, the proportion of heavy smokers among the tobacco use population is increasing, there is a trend of early start of smoking among young people; Most of those doing physical exercises are the elderly, and only 22% of the whole population engage in physical exercises. Among those aged 35 years and above, their rate of health examination over the year is only 18.8% (31.7% in urban areas, 13.4% in rural areas).

At present, among other death causes in China, 10% of people died from injury and poisoning. In the 5-24 years age group, the proportion of injuries resulting in death is more than 40% in urban areas and more than 60% in rural areas. Among the surveyed population, the rate of serious injury (with medical needs) is 2.8% (2.3% in urban areas, 3.0% in rural areas), based on which the cases of serious injuries in China are projected at 39 million over a year. The survey finds that major causes of injuries happened to urban and rural residents are related to occupational safety and protection, and trafic accident prevention.

2. Capacity building in primary health institutions is urgently needed, so is the improvement of medical and health service quality.

Along with the significant progress made in the infrastructure construction of health institutions over the past five years, personnel developement and medical service quality remain as the most prominent problems. According to the survey, 63% of the health technical personnel in township hospitals are entitled with a secondary school or below qualification, or without any educational qualifications; the proportion of this in village-level clinics is up to 90%, among them, 1/3 of village doctors hold no diploma. People with talent do not want to go to or stay at primary health institutions, for there is no effective approach yet to foster suitable human resources for the rural grass-roots. The survey finds that there are still irratioanl use of drugs at grass-roots health institutions: the prescriptions of antibiotics at township and village levels are

[2] Report of the Third National Retrospective Sampling Survey on Causes of Death, Peking Union Medical College Press

62% and 65% respectively (much higher than the figure of 45% for developing countries); and the transfusion rate of out-patients is as high as 34% (23.1% for low-income countries, 6.7% for middle-income countries). With such a personnel structure and quality of service, it is rather difficult to meet the ever growing medical and health service demands from urban and rural residents.

3. The satisfaction rate of urban and rural residents with medical services is not high, and the responsiveness of health system awaits to be improved.

One of the ultimate goals of the health system reform is to improve the satisfaction and responsiveness of residents (including patients) with health services. The survey shows that over the past five years, through the development of "patient-centered" and other measures, residents' satisfaction and responsiveness with health services at all levels, especially in urban areas, have increased to a certain degree. However, urban and rural residents' satisfaction and responsiveness with health services, in overall, are still not high. For example, 41.2% of the patients are dissatisfied with outpatient services, and 44.2% of them are not satisfied with hospitalization services. Analyses show that the main reasons for the dissatisfaction with out-patient services are high medical bills, long waiting time (mainly in large and medium-sized cities), and poor equipment and environment (mainly in medium and small cities), accounting for 15.8%, 9.1% and 7.5% respectively; In rural areas, the reasons are in the following sequence, that is poor equipment and environment, high medical bills and few variety of drugs, accounting for 18.9%, 10.6% and 8.6% respectively. The most common dissatisfaction of hospitalization service are the high medical bills, which accounts for 26% in urban areas and 20% in rural areas, followed by poor equipment and environment, which is more prominent in rural areas, accounting for 12%.

4. Health services are underutilized by urban and rural low-income population. There is a need to improve health equity.

Over the past five years, following the establishment and constant improvment of the new rural cooperative medical scheme, basic medical insurance for urban residents, and the medical aid system, the demand and utilization of health services by ruran and rural residents, especially the low-income population has been remarkably improved. The survey shows that the hospitalization rate of the low-income group has grown from 2.9% in 2003 to 5.9%, but is still lower than that of the general population. The low-income population has a higher rate of unmet demand for health services. 35.5% of the low-income group should be hospitalized but failed to, 10% higher than the average level, and their two-week untreatment rate is also higher than average. In urban areas, 40% of the low-income population are not covered by any social health insurance. The incidences of catastrophic health expenditures of urban and rural low-income households are 5.9% and 10.2% respectively, 4.7% or 6.0% higher than that of the entire population.

(III) Policy recommendations

1. Adapt to changes in medical model, expedite the formulation of health development strategies and their institutional arrangements characterized by putting prevention first, combining prevention with control and cost-effective.

When the mankind entered into the 21st century, the trends of globalization and urbanization have accelerated the accumulation of risk factors inducing the incidence and prevalence of diseases. The greatest challenge to human health mainly comes from chronic non-communicable diseases. Disease prevention has always been an integral part in the principle guiding China's health works, and has made impressive achievements in response to contagious and infectious diseases, and the protection and promotion of national health. However, it appears to be inadequate by adopting traditional biomedical model in the prevention and control of chronic non-communicable diseases, and also incapable in responding to the threat of infectious diseases under new situation. Therefore, we propose to adapt to the changes toward a new biological-psychological-social-environmental medicine model, develop comprehensive strategies which put prevention first and combine prevention with treatment, and adopt cost-effective health development strategies and their institutional arrangements.

(1) Integrate the strengths of all types of public health and medical institutions, make changes to the organizational model, establish an integral, safe and effective medical and health service system which combines prevention and treatment, with well-defined administrative levels, and reasonable costs, so as to realize "earlier and deeper" disease prevention and treatment.

At present, there is a loose and independent relationship among various types of public health services, and also between public health agencies and medical institutions, segmented by illness or different stages of illness. An integrated operational system combining prevention with treatment is not yet set up, nor is a health pattern treating people from a holistic view. The existing organization system seperates prevention and treatment from each other, adopts a biomedical-based, illness-focused model. With alteration of medical model, studies should be made on how to combine professional public health service networks, including disease prevention and control, health education, maternal and child health, mental health, emergency treatment, blood collection and supply, health surveillance and family planning, with medical institutions more closely, and how to extend vertically to the community health service centers or township hospitals and village clinics. Therefore a well-cordinated mechanism among all institutions in the public health service system and an operational transformation mechanism will be built, and the role of medical service providers in the prevention of diseases will be reflected and strenthened. The readjuestment of organizational model will facilitate the focus of medical and health work to become "earlier and deeper", and truly make "prevention first." By "earlier", it means to move the focus of ideas, capital investment, research contents (life cycle and health processes) and research fields (R&D of

biomedical and pharmaceutical product) forward. By "deeper", it means to lower the focus of population- and health-related work down to urban and rural community-based primary health services, so that all citizens would have access to basic health care and public health services. Transform the traditional organization system which is "disease-oriented" and "puts treatment as the key link" into a holistic, process-based and "from birth to death" organization system which is "people-oriented" and "integrates prevention and treatment closely together". Such organizational and functional integration would further release the efficiency of existing medical and health resources maximize the promotion of people's health and reduction of their economic burden of disease.

(2) Following the alteration of medical model and controllable risk factors, make changes to the health service delivery model, so that the policies of putting prevention first, integrating prevention with treatment, and launching prevention and treatment simultaneously would be realized.

Following the development of society, scientific and technological advances and rapid aging of population, chronic diseases occupy a dominant position in disease composition and death pattern of population. Either in terms of causes of disease or health consequences, its model has been transformed into the current bio-psychological-social medical one. In its report of "Challenges for the 21st century", the World Health Organization states that: the twenty-first century medicine should not continue to be disease-targeted but should make human health as the main direction of medical research. The trend of development of medicine has shifted from "the infinite pursuit of high-tech purposed at medical treatment" to "prevention of disease and injury, maintaining and improving health." The shift will profoundly change the theory and practice of medicine: First, turn from disease-based medicine to health-oriented medicine, give full play to modern medical advances and technological advantages of Chinese medicine theory, so as to improve the quality of national health; Second, shift from paying attention to diseases to giving concerns to human-being itself, relying on science and technology progress while strengthening human concern and cognition to human society and psychological environment. Attention should also be given on the probing of health motivation of the human body. The bio-medical model has become increasingly unsuited to people's health needs, its drawbacks have been emerging. To face with various challenges to people’s health, it requires preemptive transformation of medical model and health services delivery model, so that “putting prevention first”, “integrating prevention with treatment”, and “launching prevention and treatment simultaneously” would be realized. Clinicians should not only focus on disease treatment itself and adopt a purely clinical model, but turn it into a model combining clinics with disease prevention, and pass on health knowledge and individual behavior-related disease prevention measures to targeted patients. Health workers on disease prevention should also make changes to their traditional prevention model and contents, turn the infectious diseases prevention strategy into prevention of both infectious and chronic diseases, and expand the

traditional supply-side dominated (eg, vaccination) passive disease prevention approach to an active prevention approach, by which residents health behaviors would be changed.

(3) Reinforce traditional public health measures, screen out cost-effectiveness preventive measures, and reduce health risk factors.

Traditional public health measures, such as immunization, water supply system and latrine improvement, cooking stoves retrofiting, pest control, salt iodization, condom use, and health surveillance, etc., proved to be very effective in the prevention of infectious diseases, parasites and local disease, and should be reinforced. At present, prevention of chronic diseases, such as hypertension, diabetes, cardiovascular and cerebrovascular diseases, malignant tumors and other diseases out of multiple cause-multiple result, or single cause-multiple result, when risk factors are definite (including (1) biological factors: hypertension, high blood sugar, high blood lipids, etc.; (2) psychological factors: stress, low life and job satisfaction, etc.; (3) lifestyle factors: sleep disturbance, irrational diet, drug abuse, smoking and less physical exercise, etc.; (4) health system factors: medical incidents, nosocomial infections, etc.; (5) environmental factors: including natural environment, social and environmental factors (income, education, etc.), it is required to screen out cost-effective preventive measures, such as how to make effective tobacco control, how to develop a nationwide fitness campaign, how to enable the people to maintain a balanced diet, how to build a healthy lifestyle, and how to fight against aging, etc., in order to reduce health risk factors. Meanwhile, emphasis should also be given on researches of early diagnosis, intervention, prevention and treatment at pre- or early stages of diseases, so as to maximine the effects of disease prevention and treatment, and alleviate the financial burdens of patients.

2. Accelerate the establishment of a rational fund-raising mechanism and a scientific payment system for medical and health institutions, strengthen capacity building for primary health institutions, and improve the quality of medical services.

At present, most people complain about the accessibility and affordability of medical services, this is closely related with the operating mechanism of China’s medical and health institutions. Without a reasonable fund-raising mechanism, a scientific payment system and efficient regulatory measures, irregularities (such as induced demands, over-service, exceeding prescriptions and unnecessary tests) are inevitable in some medical and health institutions for excessive pursuit of economic interests. The public nature of the medical of health institutions is increasingly diluted, and it is difficult to improve the quality of service.

(1) Establish a rational and sustainable fund-raising mechanism and system in public medical and health institutions with the government investment as the mainstay.

The medical and health sector is characterized as a public benefit industry, it therefore should not aim at pursuiting unlimited profits from service users, nor should it impose unreasonable financial burdens to patients, but should adopt a break-even or low-profit operational model. Therefore, the government should provide cost reimbursement for the public benefit sector. At present, the main fundraising channels of medical and health institutions are their operational income and drug kickbacks, this is especially true in primary health institutions which basically rely on the selling of drugs. Such a fundraising mechanism is in controdiction with the requirements of standardized medical behaviors, rational use of medicines and service quality improvement. Most of funding for internal development of a medical and health institution, such as fixed assets investment including building construction and purchase of equipment, are relying on self-financing, apart from partial sussidies from the govement. If self-financed, the cost is to be recovered after all or it even would be profitable, and the burden is sure to be passed on to patients. To address these issues, on the one hand, regional health planning should be made to control the blind expansion of medical and health institutions. On the other hand, it is important to establish a sustainable and rational fund-raising mechanism and system in public medical and health institutions. A clear policy through legislation should be made, to define fundraising sources and reasonable proportion of fundraising in medical and health institutions.

(2) Establish a scientific payment system.

Induced demands or excessive services have their internal momentum which benefits both the individuals invovled and the hospitals, and the current service item-based charging system is its pre-condition. Interest-driven is the internal driving-force of market economy and is difficult to be changed. Under such a circumstance, only by making changes to its rules could lead the market of medical and health services toward a healthy development. Trials on this have already been making both at home and abroad, and experiences been gained. At present, at large, four medical payment systems are practiced globally: the first one is budget-based; the second is service-item based; the third is based on average cost; and the fourth is based on diseases types and per capita and other special payment systems. Apart from the second, all other above-mentioned payment systems have a function of restricting medical services from unreasonable charges, although their operability varies. On the basis of existing experiences, what we should do is to make changes to the current payment system which is mainly based on service items, eatablish a scientific one integrating expenses, quality and management together, aiming at reducing medical costs, ensuring quality of health care and improving hospital management.

3. Strengthen government and industry regulation, and improve the quality of health services and service behaviors.

The medical and health services sector is special because it is a market dominated by the supply-side. Medical behaviors and technologies are complex, highly specialized, and medical programs are optional. For service users, it is an industry with high degree of asymmetry of information. The service providers are clearly in a dominant position, while the service users can do nothing but passively accept. Although it is good to introduce competition in the medical services market, medical industry is different from other commodity manufactory sectors where under the circumstance of competition, buyers have more options. Because of the peculiarities of and difficulties under the current manangement and technological conditions, it is hard to fully nurture the market and realize the aims of reducing prices, improving quality and standardizing behaviors through proper market competition. Therefore, health care services industry is basically a market failure. In an industry with market failure, which is also a public benifit industry funded by national finance, government and industry supervision is bound to be enhanced. As a third party between doctors and patients, government and the management of the industry should, first of all, build their capacities on supervision of medical services, and secondly probe effective supervision items and approaches against mal-behaviors and poor-quality in medical and health services. They should be neutral and impartial when formulating laws, regulations, management systems and policies in addressing the universality of market failure in the industry, while strengthen inspection and regard monitoring as one of their routine activities. Once mal-behaviors are found in the industry, they should expose and correct them, study their deep-seated reasons, and try their best to prevent non-standard medical behaviors through policy and regulation development. In the process of supervision, apart from traditional measures such as inspection, supervision, evaluation and reporting, in a time with highly developed information technology, it is recommended to make full use of the interconnected health and hospital information network systems, and to use high-tech means to quickly and accurately pinpoint non-standard medical practices, such as overcharging. Meanwhile, make use of the increasingly popular Internet to mobilize the enthusiasm of the general public, facilitate them to report unreasonable medical behaviors. In short, government and industry regulation is to standardize and manage service behaviors in medical and health institutions, to ensure that standardized and quality health services are provided to residents, and to promote the healthy development of the health care industry.

4. Build a more harmonious doctor-patient relationship through the establishment of a medical dispute prevention and coordination mechanism, related policies and institutional environment

Doctor-patient relationship is an important one among social relations, in which patients seek medical treatment and physicians heal the wounded and rescue the dying. A harmonious society needs a harmony doctor-patient relationship. Along with the

continuous development and improvement of market economy, people's awareness of their rights including the right of participation, medical staff’s pursuit of interests, and many other factors have made the doctor-patient relationship increasingly strained. More cases of doctor-patient contradictions, medical disputes, even violent conflicts have been found. Frequent occurrence of medical disputes, and their expansion of influences have been detrimental not only to the image of the health workers, but also the order and quality of medical services, and will eventually bring demages to the vital interests of patients. Medical dispute is barely a pure medical problem, it has evolved into a social problem, which needs to be addresses comprehensively, considering prevention before any disputes, coordination during and after they occur, and establishment of appropriate policy environment.

(1) Establish an effective prevention mechanism against doctor-patient conflicts and medical disputes

This requires more government financial input, and an improved fund-raising and payment system. Without adequate financial input from the government, medical and health institutions would still need to derive most of its funds from patients-related sources for their development. This would induce strained doctor-patient relationship as patients would naturally question the reasonableness of hospital charges, because although they have some health insurance, they also need to bear a rather high portion of medical expenses. To prevent medical disputes, especially those induced by economic reasons, and to eliminate unnecessary financial burdens on patients and their questioning about unreasonable charges which rooted in system design, a very important point is to increase financial input from government and improve the fund-raising and payment system in the medical and health institutions.

Diagnosis and treatment need to be more standardized and medical and health quality needs to be improved. Medical staff should observe diagnosis and treatment specifications strictly in all aspects and processes, carefully implement technical operations, obtain high quality of medical technology and spare no efforts to avoid the occurrence of medical errors or accidents. As such, safe and secure medical services would be provided, which could not only ease doctor-patient conflicts, reduce medical disputes, help to improve the social reputation of the medical and health services, but also be conducive to their healthy development.

Professional ethnics education should be strengthened. The science of medicine is very practical, service-oriented, and social. A "people-oriented" and scientific outlook on development sets even higher demand for its service orientation. Hospitals should provide more professional ethics education to their staffs, build an environment with sound medical ethics, and foster the sense of responsibility and dedication of medical personnel. Medical workers should always care about the interests of patients, offer optimized diagnosis and treatment and rational prescriptions to them according to their conditions and affordability, to eliminate all concerns of patients and reduce disputes.

Quality supervision on medical and health service should be reinforced. Medical and health institutions themselves and the health administration department should conduct overall quality management on three levels, namely health care structure (including hospital organization, personnel competence, hardware and equipment), medical procedures and medical results. They should not only emphasize the terminal quality, but also basic quality and process quality, to ensure medical safety and to minimize the occurrence of medical disputes.

(2) Establish a coordination mechanism for medical disputes

The government takes the lead in establishing a coordinating agency to handle medical disputes, and building up dispute coordination procedures and systems. It is recommended that local government should take the lead in establishing a coordinating agency to handle medical disputes. As medical science is highly specialized, the agency should also be joined by medical professionals and legal personnel. An office should be set up in the health administration department and contact points be deployed outside hospitals. An early-warning mechanism on medical disputes, their handling procedures and systems should be developed, to avoid face to face contacts between dispute-related patients and medical staff within health institutions, minimize any possible interference they might bring to normal m edical activities, resolve medical disputes timely and effective and ease the tension in doctor-patient relationship.

A comprehensive medical sector insurance system should be established. The complexity and individual differences of human body, the unpredictability and uncertainty of clinical results make medical activities at high risk, which increases the possibility of conflicts between doctors and patients. Experiences from developed countries can be borrowed, i.e set up a risk-sharing mechanism for medical behaviors through medical liability insurance and medical accident insurance. Medical sector insurance shall be co-paid by the government, medical institutions, medical staff and patients, to prevent economic risks caused by negligence of medical personnel or medical accidents in medical diagnosis, treatment and care which bring damages to patients. Such a mechamism could help resolve any disputes between doctors and patients on liability for damages.

Third-party management of doctor-patient relationship. An independent medical risk management agency outside “medical and health institutions, patients and insurance institutions" is a noval management approach for doctor-patient relationship. It brings into practice a mechanism of "pre-prevention, concurrent intervention, post-compensation" against medical risks. A hospital risk management company can be entrusted by a medical and health institution to handle medical disputes, provide insurance applications and claims service on medical liability insurance, and claim settlement for non-medical liability disputes. In the events of emergencies, the entrusted companies shall take standardized measures in handling and resolving

medical disputes.

(3) Build a harmonious policy environment for doctor-patient relationship

Actively promote the reform of medical and health system. Government's commitment to liability of public health and safeguarding of people's health rights and interests is the foundation of a harmonious doctor-patient relationship. The fundamental measures of building a harmonious doctor-patient relationship are establishing a government-led health service system, formulating a reasonable health compensation mechanism, increasing government investment in health, improving hospital's operating mechanism, maintaining the public-benefit nature of hospitals, eliminating profit-driven behaviors of medical institutions and staff, improving the medical security system and its level, strengthening governmental supervision of medical services, developing rural and community health services, and easing the psychological pressure of the general public relating to the accessibility and affordability of health services.

Safeguard patients rights through legislation meanwhile standardize patient rights and obligations. Patient's rights refer to the rights and interests of patients, which can be realized in medical practices through a profound right protection system and effective management measures. Such a system and measures would also ensure the providing of high level medical services and a good doctor-patient relationship. Based on international experiences, legislation on patients rights could be built with the following contents: (1) the right to medical treatment; (2) the right to security; (3) the right to informed consent; (4) the right to choose: including the choices of medical institutions, doctors, treatment options and drugs; (5) the right to privacy; and (6) the right to compensation. At the same time, patients' obligations should also be clarified, so that patients would consciously fulfill their responsibilities, such as paying respect to doctors, and maintaining the healthy functioning of doctor-patient relationship.

Formulate code of conduct similar to the "Physician Charter", and clarify the rights and obligations of health workers. The specification of medical science has put medical staff in a dominant position in the doctor-patient relationship. International provisions on doctors' rights and obligations are usually in a form of code of conduct, such as the physician charter. Adoption of codes of conduct helps to identify the basic principles of the medical profession, such as putting patient interests first, patient autonomy and social justice. In addition, it helps to clarify a series of professional accountabilities, such as committed to professionalism, honest to patients, keep secret for patients, maintain an appropriate relationship with patients, improving the quality of medical services, promoting universal health care, fair distribution of limited resources, practicing scientific innovation, ensuring the reliability of knowledge, maintaining credibility by controlling conflicts, and assuming professional liabilities.

Keep on communicating with the media, and make sure they would correctly lead public opinions. The issue of visiting a doctor is always a hotspot in the society, and a focus of mass media. Great importance should be attached to keep close contacts with the media. Timely, accurate and comprehensive information should be provided to them and facilitate them in abreasting the real situation, guiding public opinions correctly, and objectively and truthfully covering health services activities. A good communication with the media would also prevent them from manipulating any individual medical malpractices. When the entire society joint efforts in building a harmonious doctor-patient relationship, a healthy medical order will be maintained.

5. A co-ordinated urban and rural health development would narrow the gaps of health demand and utilization among different regions and populations, and promote fairness and corresponding efficiency.

In recent years, although there has been significant progress in the work of rural health, there remain many problems. Over the years, inadequate public health investment has triggered the flow of health resources to cities, especially large hospitals. The gap between rural and urban areas is enlarging, and there are no fundamentally changes in the situation of rural health lagging far behind. Medical insurance system has provided a basic guarantee for the general population, but differences in health demands and utilization still exist among different regions and populations. Therefore, urban and rural health services need to be developed in an integrated manner, with more input to economically underdeveloped regions in the rural areas, so that medical burden of the poor will be reduced and gap between the rich and the poor be nerrowed.

(1) Co-ordinated development of urban and rural health services.

There should be more investment from the government in rural health services, and a stable investment security mechanism to be built for the further development of rural health service system. The existing rural medical and health service network at county, township and village levels should be further improved, so are the capacities of rural primary health service delivery. More efforts should be put on personnel development in rural health services, by fostering appropriate personnel in rural areas, encouraging graduates from medical schools to work in rural health services, and exploring a long-term mechanism of staff training in rural health institutions. Furthermore, health workers from urban medical and health institutions will be dispatched to rural areas to provide health service and technical assistance, and a long-term mechanism of counterpart support to upgrade the levels of rural medical and health service will be probed. Efforts should also be put onto rural medical and health system reform, in particular, in rural areas medial and health institution-building and management should be strengthened, in rural areas health service delivery and charging should be standardized, service quality should be improved, service costs should be reduced, and the gap between urban and rural areas should gradually be bridged.

(2) Gradually bridge the gap and reinforce the interface between different medical security systems.

At present, the major social health insurance programs include the basic medical insurance for urban employees, the basic medical insurance for urban residents, and the new rural cooperative medical scheme. By and large, there is still a large gap between the existing social health insurance system with the expectations of all sectors of society. In the system design, there is a clear urban-rural duality, resulting in a tremendous iste of management resources. Establishing a uniform and people-centric social medical insurance system for both urban and rural residents is conducive to the co-ordinated urban and rural development, and compliant to the scientific outlook on development. By doing so, people’s enthusiam for innovation, entrepreneurship and creation will be fully mobilized, their legitimate rights and interests are safeguarded, and their accessibility to doctors be ensured. All these are of practical significance in the promotion and development of a harmonious society. As China's overall national strength has been continuously enhanced, building a unified social security system will be an objective requirement for the coordinated development of urban and rural areas. At first, a long-term plan for policy development should be made, and be implemented successively based on local conditions. For example, the basic medical insurance for urban residents and the new rural cooperative medical scheme can be merged with each other and implemented before various health insurance policies are gradually united.

The health insurance system is a security system for all residents. However, to improve the accessibility of the poverty-stricken population for health, to alleviate their financial burdens, and to prevent them from being impoverished because of illness, a more comprehensive medical aid system is the key. Medical aid is provided by the government for the poor population to ensure that they get the same medical services with the other population. It therefore should be promoted in the building of basic medical security system in China. A medical aid system with stable sources of funding, standardized management and operation and obvious relief effects should be built. The system needs to be gradually expanded and its subsidy quota needs to be gradually upgraded based on the practice of multiple relief approaches. Furthermore, medial aid system should be converged with relevant medical security systems, and the ways of settlement in different systems need to be improved so that convenient and efficient services will be provided to the people in difficulty and their medical burdens be reduced.

(3) Strengthen capacity-building at primary health institutions for the purposes of improving service quality and easing the medical burden on the residents.

The primary medical and health service system is an important carrier for public health and basic medical services. Primary health facilities are close to the residents, and the cost of their service is relatively low. They are irreplaceable as they could provide safe, convenient, high quality, low-cost primary medical and health services

for the urban and rural residents. Over the past five years, the Ministry of Health and relevant departments have taken various measures and increased investment in improving public health, in rural areas health and community health, and results have been seen. However, gaps between the urban and rural areas and between large hospitals and primary health services are still widening. In the recent key implementation plan of medical and health system reform, many specific measures are put forward for the development of public health, in rural areas health and community health, and need to be further strengthened and implemented. The key to further improve the primary health service system is the fostering of grass-roots health personnel. Pragmatic training and re-training systems should be built to ensure that those highly competent would stay at the grass root level and serve for the general public. The compensation mechanism for primary medical and health institutions needs to be reformed and the income distribution system be improved. Medical and health institutions at grass-roots levels are encouraged to make use of appropriate medical technologies and essential drugs in providing safe, effective and low-cost primary health services for the urban and rural residents. A hierarchy of health care, community-based first medical consultation and the dual referral system will be gradually established, for the purpose of providing safe, convenient, high quality, low cost services to the general public in both rural and urban areas.

The government should strengthen quality control of health service. A quality evaluation and assessment system should be built, and the evaluation and assessment be conducted by both external and internal professionals. The assessment results should be the basis of government investment and compensation, and should be linked with the income distribution system of the institutions. Furthermore, a quality-centered and standadized information system for medical and health institutions should be established, so as to bring changes to the "fragmented" situation of information systems, and through which, the overall quality management in the medical and health service sector is expected to be further motivated.