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SHA-Based Health Accounts in the Asia/Pacific Region
:China 1990-2009

Zhao Yuxin

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ABSTRACT

With assistance from the World Bank, China started developing its own National Health Accounts (NHA) system in the early 1980s. To allow for international comparisons of heath expenditures, China adopted two different classification systems since 1999: one based on the International Classification of Health Accounts (ICHA), the other one based on national criteria to inform policy analysis. The NHA team produced health spending estimates by financing agents, and by providers at national level between 1990 and 2009. However estimates of health expenditure by function and mode of production were not able to be produced because of the non-availability of the requisite national disaggregated data collections. As a feasibility study of more extensive SHA estimates the paper also presents estimates for the Tianjin municipality of China which include health expenditure by function as well as by financing source and provider. This reflects the proposal posted on the SHA revision website at the beginning of August 2010 by the International Health Accounts Team (IHAT) organizations. The estimates provided for the Tianjin municipality should not be considered to be indicative of the national estimates as the Tianjin municipality's economic and demographic characteristics and health system differ significantly from those of China as a whole.

Main data sources include the Ministry of Finance, the Ministry of Labor and Social Security, the National Bureau of Statistics, and the Ministry of Health. In addition, household and field surveys were used as additional data sources for the estimation of health expenditures in Tianjin.

Chinese Total Health Expenditure (THE) was 1720.48 billion RMB (251.86 billion USD) in 2009. THE as a percentage of GDP gradually increased from 3.02% in 1978 to 4.85% in 2003. The percentage showed a slight decline over the subsequent four years before increasing again in 2008. In 2009 it reached 5.13% of GDP. Per capita health expenditure grew at an average annual rate of 10.6% in real terms during the reporting period, from 11.45 RMB in 1978 to 1289 RMB (188.7 USD) in 2009.

At present, the general government sector is the primary financing source in China. The general government sector financed 62.32% of THE in 1990. This proportion declined to 35.76% in 2001 before rebounding since 2002 to reach 51.67% in 2009. Social security expenditure share in THE declined from 38.29% in 1990 to 19.60% in 2001. It has increased since 2003 and reached 33.33% in 2008. At the same time, private expenditure - mostly households out-of-pocket (OOP) payments - share in THE increased from 37.68% in 1990 to 64.43% in 2001, before declining to 48.33% in 2009.

Hospitals' expenditure accounted for the largest share of current health expenditure in China, reaching 66.89% in 2009. Retail sales and other providers of medical goods health expenditure increased rapidly during the reporting period, and the share in THE was 10.7% in 2009. The share of health expenditure in THE of providers of ambulatory health care decreases from 25.1% in 1990 to 10.95% in 2009. The share of provision and administration of public health programs decreased from 6.66% in 1990 to 5.50% in 2001, before increasing to reach 8.5% in 2009.

Data for the Tianjin municipality indicated that curative care service accounted for the largest share in current health expenditure in 2009 (72.4%), with 31.4% and 40.9% spent on in-patient and out-patient care respectively. Consumption of medical goods (not specified by

function) reached 19.8%. Preventive care (which includes all kinds of preventive care services provided by public health institutions and hospitals) accounted for only a small share of current health expenditure (5% in 2009). Governance, management and health system administration accounted for 1.6%.

ABBREVIATIONS

BMI	Basic Medical Insurance Scheme
CHEI	China Health Economic Institute
CMS	Cooperative Medical System
GDP	Gross Domestic Product
GIS	Government Insurance Scheme
GRP	Gross Regional Product
ICHA	International Classification for Health Accounts
LIS	Labor Insurance Scheme
MOH	Ministry of Health
MSA	Medical Savings Account
NHA	National Health Accounts
NRCMS	New Rural Cooperative Medical System
OECD	Organization for Economic Co-operation and Development
OOP	Out-of-pocket
OTC	Over-the-Counter
SHA	System of Health Accounts
TCHE	Total Current Health Expenditure
THE	Total Health Expenditure
UEBMI	Urban Employee Basic Medical Insurance Scheme
URBMI	Urban Resident Basic Medical Insurance Scheme
URMA	Urban & Rural Medical Assistance
VCE	Village Collective Economy
WB	World Bank
WHO	World Health Organization

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INTRODUCTION

China health system profile

1. China is a developing country of 9.6 million square kilometers, which included 32 provinces, municipalities and autonomous regions and Hong Kong SAR and Macao SAR. Data in this report do not include Hong Kong SAR, Macao SAR, and Chinese Taipei province.

2. The first 25 years of the PRC (1949-1964) witnessed major advances in public health outcomes and significant improvements in vital indices as a result of universal access to comprehensive, basic care throughout the country. Since the reforms and opening up in the 1980s, China has experienced fast economic development with GDP increasing at an annual average rate of 10%, to be 35,334 billion RMB (5172.6 billion USD) in 2009.

3. In 2009, China population reached 1.335 billion with the proportion of population aged over 65 years increasing from 5.6% in 1990 to 8.5% in 2009. China's population is aging. With urbanization accelerating over recent years, the urban population reached 46.6% of the total population in 2009.

4. The transition to a market economy was accompanied by a significant deterioration in the health system, particularly in rural areas, and only recently human development - in terms of health, education and social welfare – was identified as a national priority under the 'harmonious society' policy directive.

5. Present and future population health challenges include both demographic and epidemiological changes. There is a rapidly ageing population, in large part due to the one-child policy (Therese et al 2005), a double epidemic of complex chronic conditions (including diabetes and associated cardiovascular diseases and mental conditions), and the unfinished burden of communicable diseases (that is HIV/AIDS, TB, newly emerging outbreaks of avian influenza and SARS). Poor health status is caused in part by environmental degradation related to economic development - air pollution, floods - and road traffic trauma Health and social inequalities – in particular between the coastal conurbations and the rural hinterland - are additional challenges.

6. Like other countries, China has mixed health services delivered by public-owned and private facilities (such as associations and private practices). By 2007, there were 298,408 health facilities in China, 28% of which were owned by government, and 4,787,610 health professionals, about 77% practicing in government owned facilities.

7. "Opinions of the CPC Central Committee and State Council on Deepening the Health Care System Reform" (hereinafter referred to as *Opinions*) published on May 17, 2009 state that the overall health care system objective is to establish and improve the basic health care system covering urban and rural residents, and provide the people with safe, efficient, and affordable health care services. To achieve this overall goal, four systems covering urban and rural residents are being established: the public health service system; health care service system; medical security system; and a secured pharmaceutical supply system. , The four systems are to be implemented in a coordinated way with the aim to form a "four in one" basic health care system.

Health financing system

8. Before the economic reforms of late 1970s, China was a planned economy where all

health care services were publicly financed, through either tax-funded support of nationalized health facilities, or contributions to a health insurance scheme. However, there were significant differences between urban and rural areas. Urban health insurance included the Government Insurance Scheme (GIS) for civil servants and the Labor Insurance Scheme (LIS) for workers in state-owned enterprises and their families, while rural health insurance was operated through the Cooperative Medical System (CMS). The GIS, LIS and CMS all involved low co-payments at the point of delivery.

9. With the transition from a planned to market-based economy in the late 1970s, reforms were implemented in the health care sector which resulted in health facilities having to increasingly rely on private funds (mostly household OOP payments) as government subsidies for public health facilities were reduced. With reduced government subsidies, the GIS and LIS came under severe financial strain, and the rural CMS collapsed in most areas.

10. To achieve the Chinese government's ultimate goal of "universal coverage" and to improve the fairness of financial contributions and access to health services, government agencies at all levels have been increasing their support for health - particularly since 2000. A notable example is the central government's earmarked subsidies for public health care. To promote reform of the health insurance system, the government established the Urban Employee Basic Medical Insurance Scheme (UEBMI) in 1998 and the New Rural Cooperative Medical System (NRCMS) in 2003. The Urban Resident Basic Medical Insurance Scheme (URBMI) and the Urban & Rural Medical Assistance Scheme (URMA) have also been trialed and expanded in 2006.

11. The various health insurance schemes have different coverage and financing arrangements. NRCMS covers the rural population and primarily pays for hospital expenditure. It is financed through a tripartite arrangement by government (at county, city, provincial and national levels), collectives and individuals. UEBMI covers urban employees and combines social insurance and personal medical savings accounts (MSAs), to which both employers and the employees contribute. UEBMI funds both inpatient and outpatient care. URBMI covers children, students, and unemployed urban residents, who are not covered by UEBMI. It is jointly financed by government and individuals, and mainly pays for inpatient services. URMA is largely funded by government to ensure access to health services for the indigent.

12. In China, OOP payments account for most of private health expenditure. In absolute terms, most payments go towards public hospitals and township health centers as opposed to private facilities. Private health insurance has been introduced only recently, but has been growing rapidly.

13. In this round of, In the Chinese government's May 2009 "Deepening the Health Care System Reforms" it is seeking to encourage and guide social capital to sponsor health care undertakings, actively promote the development of non-public health care institutions, and form a health care system with multiple categories of investors and diversified investment modes.

14. Table 1 provides key data including China's population, GDP and health spending estimates, while Table 2 describes China's health financing arrangements.

Table 1: Population, Gross Domestic Product, and expenditure on health in China, 2009

Population (million)	1334.74
of which	
Urban	621.86
Rural	712.88
Gross domestic product (GDP) per capita (RMB)	25188.0
Total health expenditure per capita (RMB)	1289.0
General government	666.0
Private	623.0
Total health expenditure as % of GDP	5.1
General government health expenditure as % of total health expenditure	51.7
Pharmaceutical expenditure as % of total health expenditure	10.7

Table 2: Health financing arrangements

Health care coverage	Urban social health insurance (i.e. UEBMI) covers employees in the formal sector. Participation is mandatory, but not strictly enforced. The employed and dependents, mostly the aged and young, are starting to be covered by URBMI. Rural health insurance (NRCMS) is mostly voluntary. Geographical coverage remains limited but is being expanded rapidly. In both urban and rural areas, private complementary insurance is available to increase the level of maximum benefit. For those outside formal health insurance schemes, government subsidies to health care providers constitute another form of implicit insurance. However, due to the declining share of these subsidies in overall financing, the implied price subsidy is falling over time.
Risk pool structure / fragmentation	Risk pooling in the BMI schemes is at city-level (county or municipality); in NRCMS, it is at county level. In neither case is there risk-equalization across risk pools, although there are targeted central government subsidies in the NRCMS.
Health insurance contributions	In UEBMI and URBMI, both employers and employees make contributions that are a fixed percentage of income. In many localities, individuals can make voluntary payments for complementary coverage. Part of the contributions goes into a personal MSA, and the other part to a social pooling account. In NRCMS, individual contributions are fixed for all beneficiaries within risk pools, but vary across risk pools (counties). The MSA model is also used in some counties.
Benefits package and co-payments	Both BMI schemes cover a certain percentage of eligible expenditures, up to a ceiling. In most localities, MSAs are used

	to finance outpatient care and social pooling accounts finance inpatient care. In other localities, the social pooling account is only accessed when an individual's personal account is exhausted. Eligible expenditures and benefit caps vary across risk pools. NRCMS arrangements operate similarly to BMI schemes. However, due to lower levels of financing, the range of eligible services is much more limited, and co-insurance rates are often high. As with the BMI schemes, benefits packages vary across risk pools.
Special arrangements for the poor	The new Urban and Rural Medical Assistance program is intended to provide benefits to the poorest segments of the population, and to those facing "very high" health expenditures. Program details and implementation arrangements, including the extent to which the URMA scheme is integrated with health insurance schemes, vary considerably across localities. In addition, some localities require hospitals to provide health care to the poor for free or at reduced prices, but this requirement is variably enforced.

National Health Accounts in China

15. With the technical assistance from the World Bank, the Department of Planning and Finance of the Ministry of Health initially estimated China's total health expenditure by source for 1980 and 1985. By the early 1990s, the government and the World Bank Economic Development Institute had jointly established the China NHA team. The team conducted a series of comprehensive studies on NHA theory and methodology, and designed a preliminary China NHA classification system.

16. Currently, NHA compilation is commissioned by the Department of Planning and Finance of MOH and undertaken by the China Health Economics Institute. To fulfill the needs of international comparison, the health accounts have been dually coded since 1999. One set of codes is based on OECD ICHA, the other is China-specific. Estimates by financing source with the national classification codes are available from 1978 to 2009, while those also with SHA coding are available from 1990 to 2009; results by provider are available from 1990 to 2009. Revisions are made annually on the basis of changes to macro-economic data.

17. The NHA team has actively explored two- and three-dimensional cross-tabulations as well as sub-NHA analyses. Sub-national NHA research, including public health expenditure in certain geographic areas and HIV/AIDS accounts, has been piloted. Three-dimensional (source, provider and function) analysis was completed only in the Tianjin municipality due to the non-availability of national disaggregated data.

18. China has been promoting the institutionalization construction of NHA. The formal data dissemination system has been established. Since 2002, CHE data has entered into the national routine information dissemination system, and published by the National Bureau of Statistics in "China statistics yearbook" annually.

19. National cooperative group network on NHA was established in 2008 under the leadership of the Department of Planning and Finance of MOH. Thanks to the effort made by the China Health Economics Institute, today this cooperative group includes 16 member

provinces and cities. The goal of this network is to improve NHA development and its application to health policy at the sub-national level, as well as to promote further development of three dimensional NHA analyses in regions with sufficient technical capacity.

20. In 2010, the availability of NHA data in China witnessed a great breakthrough. NHA data management and query systems were established. By using those tools, policy-makers and researchers are able to get NHA data and sub-national health accounts data. Meanwhile, this information system allows online data reporting and auditing, which can promote the availability of NHS information in a standardized and systematic form in China.

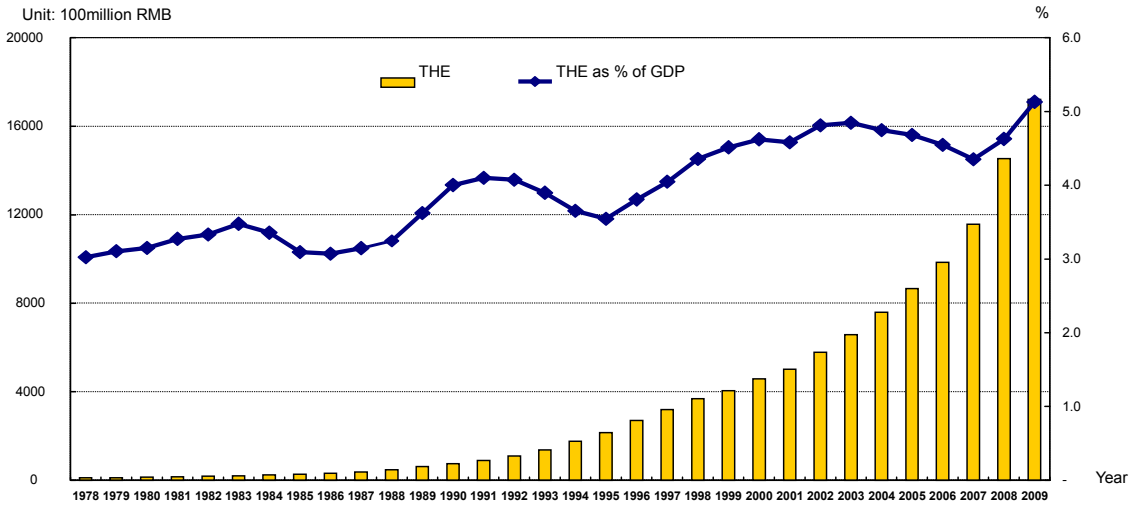
STRUCTURE AND TRENDS IN HEALTH EXPENDITURE

National health expenditure

21. Total health expenditure (THE) increased from 11.0 billion RMB in 1978 to 1720.48 billion RMB (251.9 billion USD) in 2009. During the same period, the average annual real growth rate was 11.77%[1], higher than that of GDP (9.88%). The average elasticity ratio of health consumption to GDP was 1.19, meaning that THE increased on average greater than GDP in China (Figure 1).

22. THE as a proportion of GDP grew from 3.02% in 1978 to 4.85% in 2003. It was stable afterwards, and then increased to 5.13% in 2009.

Figure 1: Total Health Expenditure (THE) as percentage of GDP, 1978-2009



23. Per capita health expenditure increased from 11.45 RMB in 1978 to 1289.0 RMB (188.70 USD) in 2009, an average annual rate of 10.60 % in real terms. China's per capita health expenditure was 115.20 USD in 2007, and was higher than both the average level of the 54 low-middle income WHO member states (80 USD), and some other countries at a similar stage of economic development in Asia-Pacific region, such as Indonesia (42 USD) , Philippines (63 USD), but lower than Thailand (136 USD)

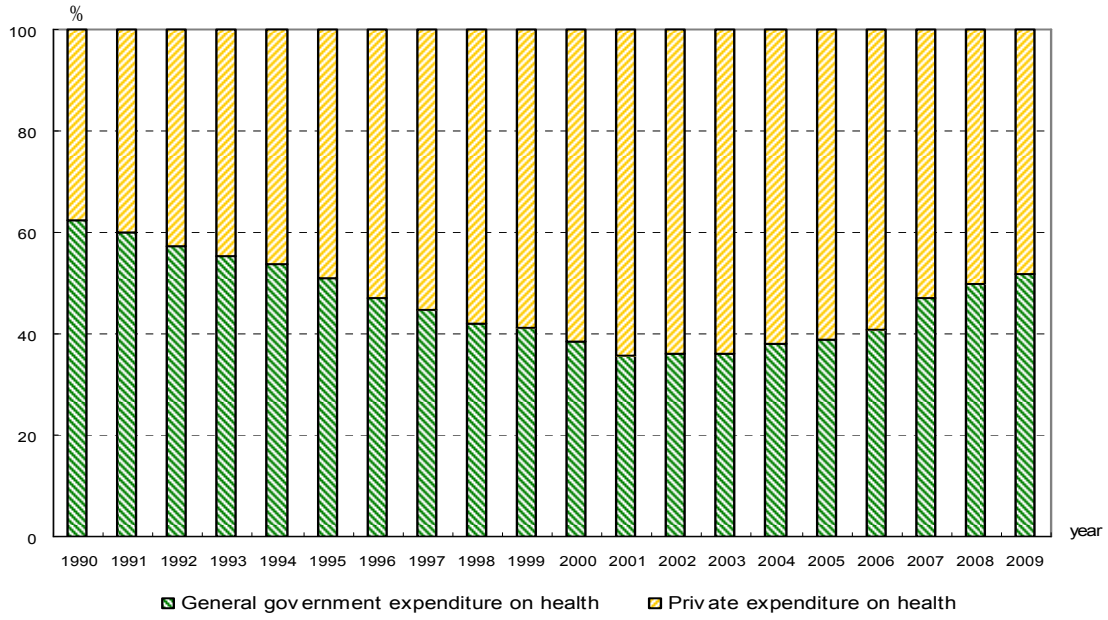
Total health expenditure by financing source

24. General government spending accounted for 62.32% of THE in 1990, but decreased to 35.76% in 2001.The proportion has rebounded somewhat since 2002 to reach 51.67% in 2009 (Figure 2). The share of financing contributed by territory governments (excluding social security funds) in THE decreased from 24.03% to 12.77% between 1990 to 2009, as the central and local governments' heath expenditure share in THE declined from 24.03% to 15.93%. After 2002 despite the share of THE financed by general government expenditure

[1] The deflator used is the GDP deflator which is obtained from the China Statistical Yearbook 2010.

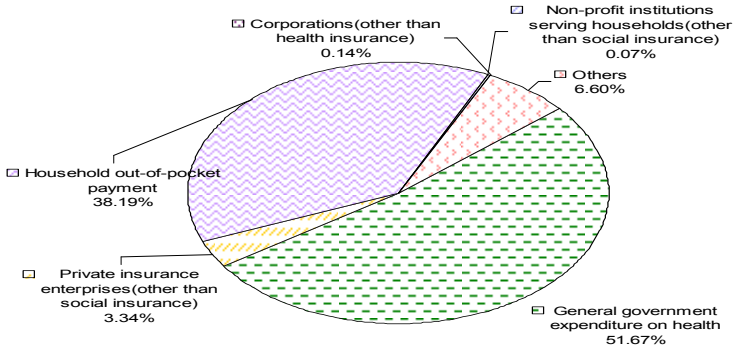
increasing, the share of territory governments' expenditure (excluding social security funds) did not significantly increase. The increase of the government investment was mainly due to the different health insurance schemes introduced in 2003. The social security expenditure's share decreased sharply from 38.29% to 19.60% from 1990 to 2001, before increasing since 2003, up to 33.33% in 2008 (Table A1)

Figure 2: THE by financing source, 1990-2009



25. Private spending has become the predominant THE financing source for much of the past decade. Its share increased from 37.68% in 1990 to 64.24% in 2001, before it declined to 48.33% in 2009. A significant factor behind this change was funding from OOP payments - the proportion of THE financed by OOP payments increased from 35.73% in 1990 to 59.97% of THE in 2001 before decreasing to 38.19% in 2009. Figure 3 reports the percentage share of total health by financing source in 2009[2]

Figure 3: THE by financing source, 2009



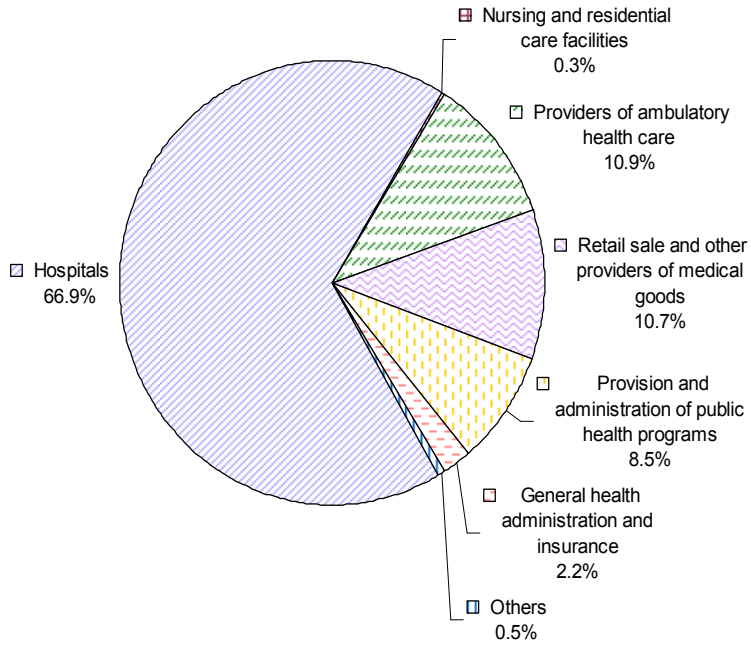
[2] The 'Others' category refers to other sources of financing from the private sector, including the facility self-financing, donations from non-governmental sectors, enterprise spending on health and so on.

26. Private health insurance has been offered in China only since the early 1980s with the commencement of life insurance operations. It has quickly expanded along with the development of UEBMI since 1998. Data on private health insurance has only been available since 1997, with its share of THE increasing from 0.43% in 1998 to 3.33% in 2009.

Current health expenditure by provider

27. Hospitals have been the recipients of the largest share of health expenditure, accounting for 66.89% of the total current health expenditure (CHE) in 2009. Providers of ambulatory health care and retail sales and other providers of medical goods accounted for 10.95% and 10.69% of CHE respectively. The remaining health spending share was reported for provision and administration of public health (8.50% of CHE), general health administration and insurance (2.19% of CHE), and nursing and residential care facilities (0.31% of CHE) (Table A2 and Figure 4)

Figure 4: Current health expenditures by provider, 2009



28. Hospital's share of CHE increased to 66.9% in 2009, with spending on retail sales and other providers of medical goods also increasing (with the latter quadrupling from 2.46% in 1990 to 10.69% of CHE in 2009). Conversely, the share of ambulatory health care providers dropped from 25.03% of CHE in 1990 to 10.95% of CHE in 2009. The provision and administration of public health programs declined from 6.66% in 1990 to 5.50% of CHE in 2001, before increasing to 8.50% in 2009.

HEALTH EXPENDITURE IN TIANJIN MUNICIPALITY

29. Tianjin is located on the east coast of China, and is one of the four municipalities in China[3]. It has a relatively highly developed economy. Tianjin's per capita gross regional product (GDP) was 62,403 RMB (9,135USD) in 2009, which ranked it third amongst all administrative regions in mainland China and compares with national per capita GDP of 25,188 RMB. Its population is 12.28 million, of which 78.0% are urban residents (Table 3).

30. Health expenditure in Tianjin municipality in 2009 was prepared using the revised SHA classifications to test the feasibility of using those classifications more extensively. In 2009, total health expenditure was 29.03 billion RMB, or 3.9% of gross regional product (compared to the national figure of 5.1% of GDP), and per capita health expenditure was 2363.4 RMB (compared to China's 1,289.0 RMB).

Table 3: Population, Gross Domestic Product, and expenditure on health in Tianjin, 2009

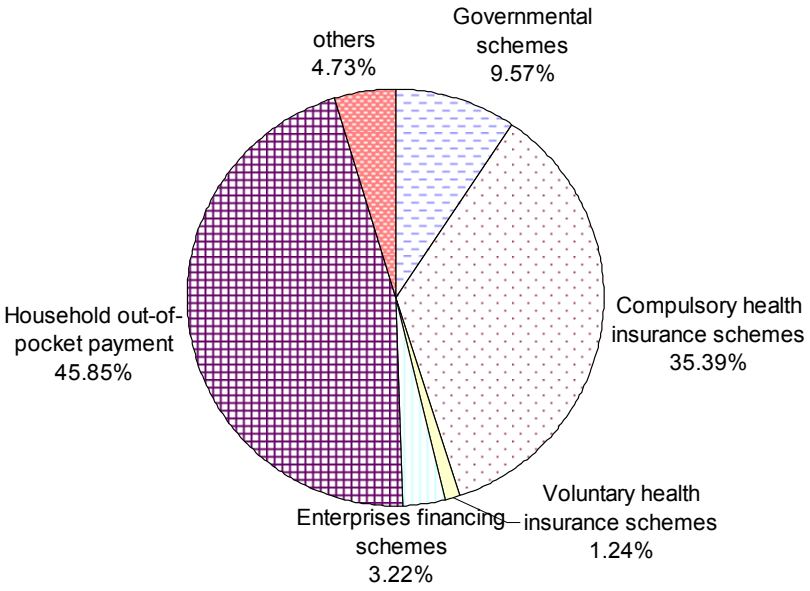
Population (million)	12.28
of which	
Urban	9.58
Rural	2.70
Gross domestic product (GDP) per capita (RMB)	62403
Total health spending per capita (RMB)	2363.4
funded by	
Governmental schemes	226.3
Compulsory health insurance schemes	836.4
Voluntary health insurance schemes	29.3
Enterprises financing schemes	76.0
OOP	1083.6
Total health spending as % of GDP	3.9

Total health expenditure by financing schemes

31. Government scheme accounted for 9.57% of the total health expenditure in Tianjin, while compulsory health insurance schemes financed 35.39% of total health care spending. Voluntary health insurance schemes financed 1.24% of THE，while enterprises schemes 3.22%. The household OOP share in THE was the largest one (45.85%) (Table B1 and Figure 5).

[3] China also has 23 provinces, five autonomous regions and two special autonomous regions

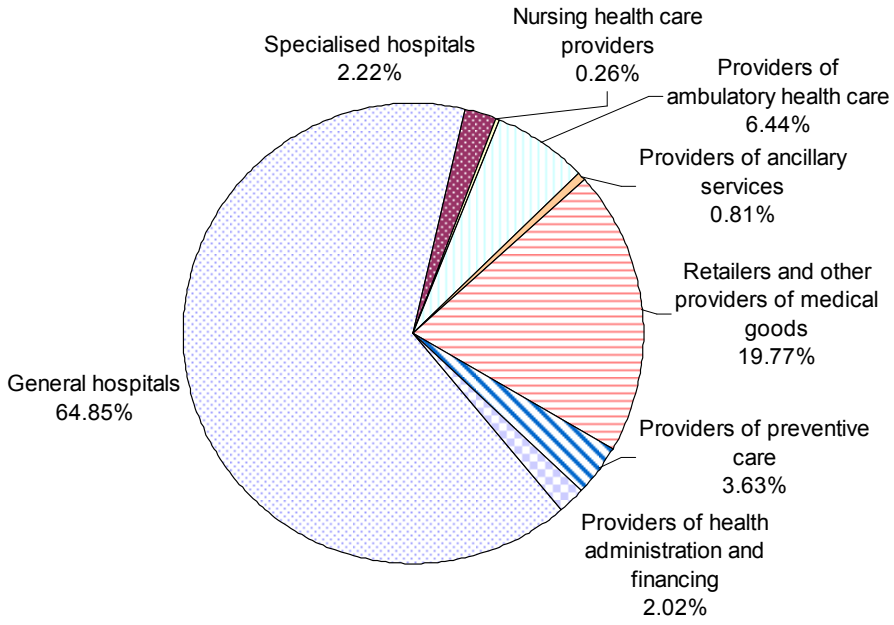
Figure 5: THE by financing schemes, Tianjin, 2009



Current health expenditure by provider

32. In 2009 the largest share of Tianjin's health expenditure (64.85%) was on general hospitals. Nursing health care providers and providers of ancillary services accounted for less than 1% of health spending， while around 20% was allocated to retailers and other providers of medical goods (Table B2 and Figure 6).

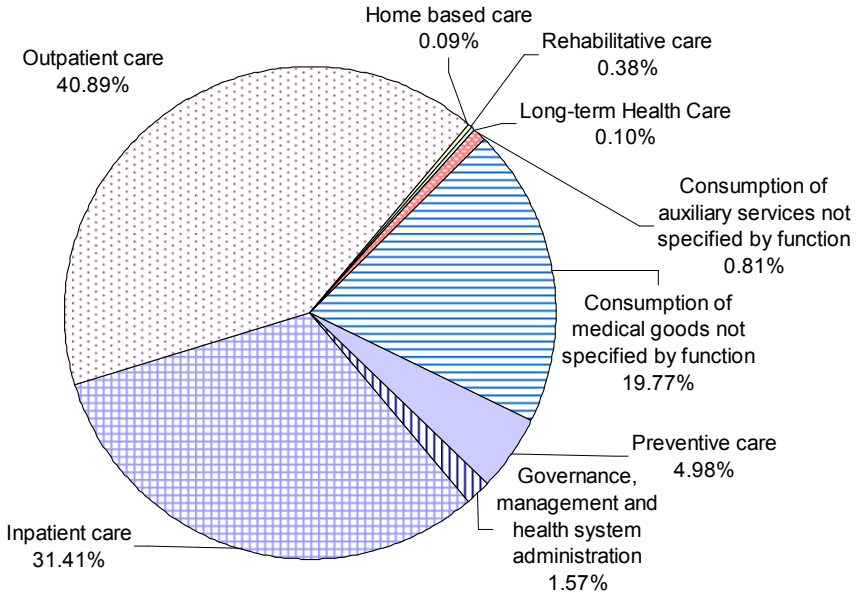
Figure 6: Current health expenditures by provider, Tianjin, 2009



Current health expenditure by function

33. In 2009, curative care service accounted for the largest share in THE (72.38%), of which 31.41% and 40.89% were spent on in-patient and out-patient care respectively. Home-based, rehabilitative，and long-term care accounted for less than 1% of total spending. Consumption of medical goods not specified by function was 19.77%. Albeit preventive care includes all kinds of preventive care services provided by public health institutions and hospitals, it just accounts for a little share in total health expenditure (Table B3 and Figure 7).

Figure 7: Total current health expenditure by function, Tianjin, 2009



Current health expenditure by function by provider

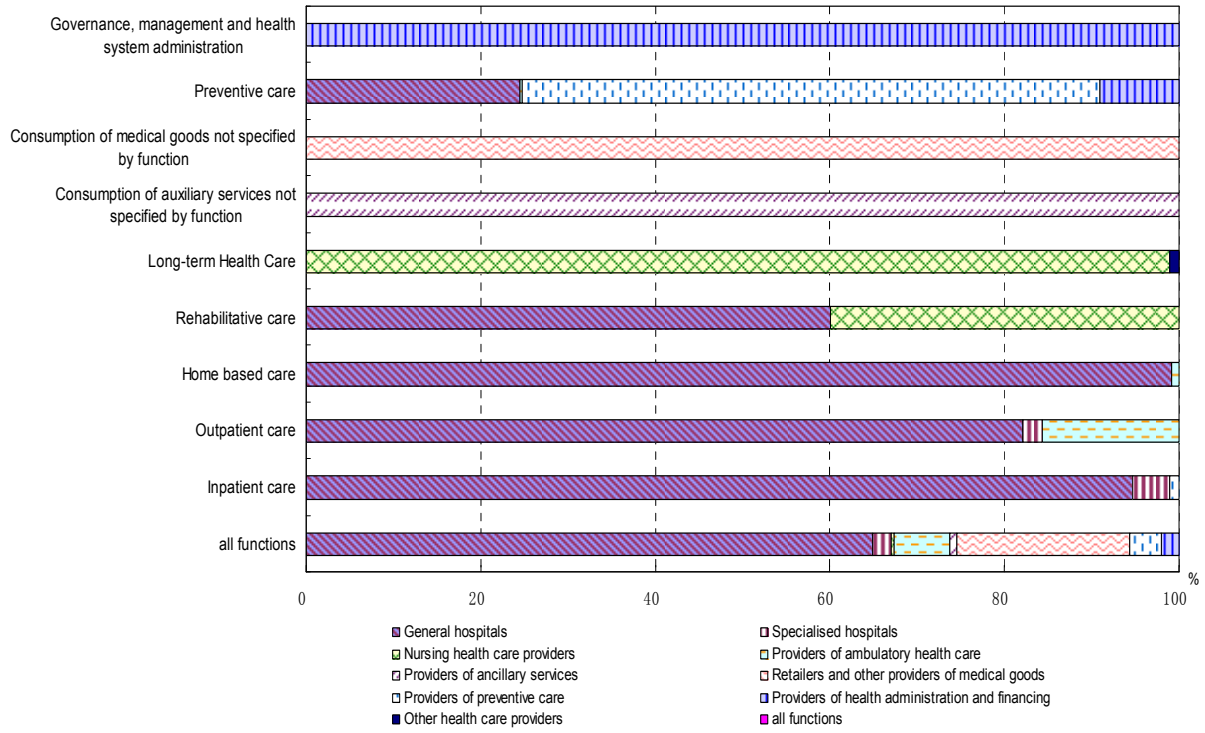
34. General hospitals accounted for 94.7% of inpatient health expenditures, while specialized hospitals accounted for 4.3% and providers of preventive care 1.0% (Table B4 and Figure 8).

35. Health spending on out-patient care was predominantly (82.1%) in general hospitals with 2.1% and 15.7% for specialized hospitals and providers of ambulatory health care respectively. Rehabilitative care spending was allocated to general hospitals (6-%) and nursing health care providers (4-%). Long-term health care was overwhelmingly allocated to nursing health care providers (98.9%).

36. The total spending on consumption of medical goods not specified by function was reported for retailers and other providers of medical goods.

37. Preventive care expenditure was mostly (66.1%) associated with providers of preventive care，while 24.4% occurred in hospitals. The remaining expenditure was allocated to providers of health administration and financing (9.1%) and providers of ambulatory health care (0.3%).

Figure 8: Health expenditure by function by provider, Tianjin, 2009



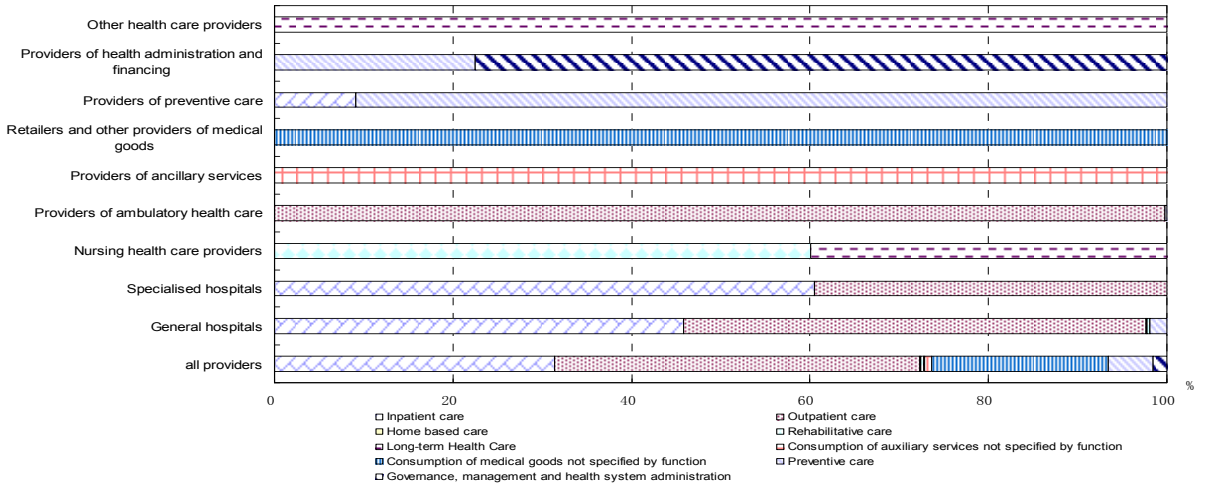
38. General hospitals expenditure (17778.6 million RMB) was mainly reported for inpatient care (45.8%)，and outpatient care (51.8%) (Figure 9).

39. Of the specialized hospitals expenditure of 608.57 million RMB, 60.5% was reported for inpatient care services，and 39.5% for outpatient care services.

40. Nursing health care providers' expenditure was spent to provide rehabilitative care and long-term health care (6-% and 4-% respectively).

41. Spending of the providers of ambulatory health care was almost entirely on outpatient care (99.8%), while 90.9% of expenditure of providers of preventive care was used for preventive care.

Figure 9: Health expenditure by provider by function, Tianjin, 2009



Current health expenditure by financing scheme by provider

42. In 2009, 6.6% of the current health expenditure of general hospitals was financed by governmental schemes, 45.4% by compulsory health insurance schemes, and 42.2% by household out-of-pocket payment. The voluntary health insurance schemes and enterprises financing schemes contribute 1.8% and 4.1% respectively of the total (Table B5 and Figure 10).

43. Government schemes paid for 13.9% of specialized hospitals services, while 54.5% was paid by household OOP payment. Compulsory health insurance schemes, voluntary health insurance schemes, and enterprises financing schemes financed 21.6%, 4.5%, and 5.5% of health spending respectively.

44. Government schemes (34.5%), OOP payments (32.6%), compulsory health insurance schemes (29.8%) and voluntary health care payment schemes (3.1%) financed nursing care providers.

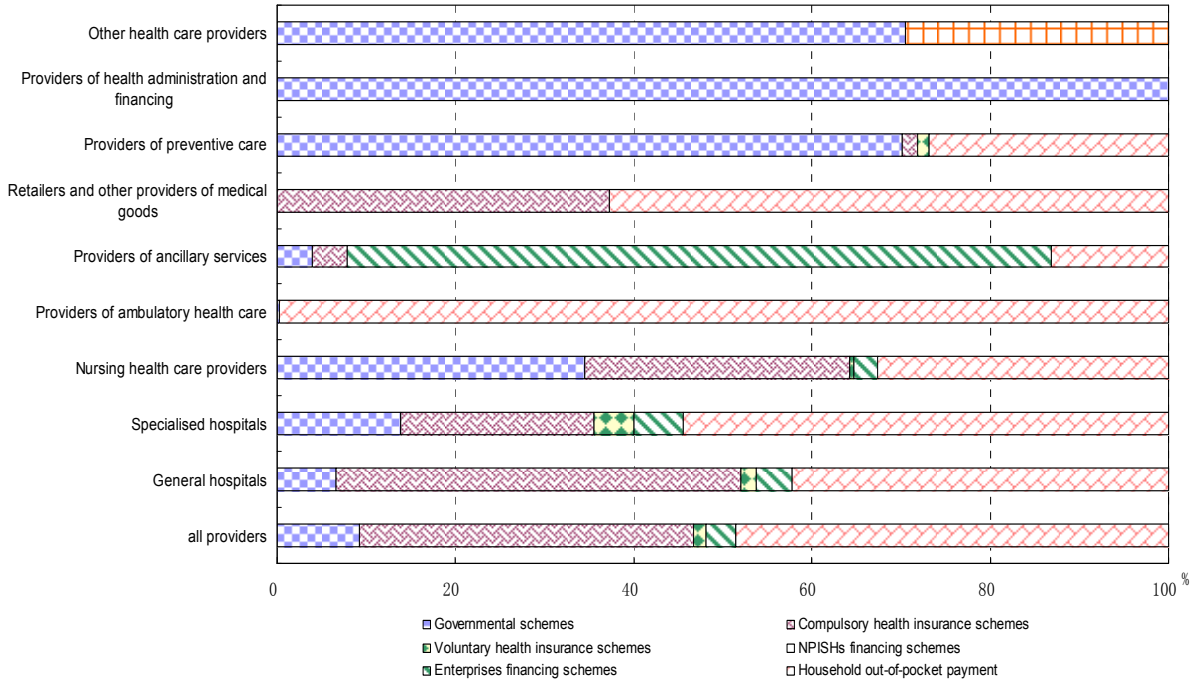
45. Providers of ambulatory health care were overwhelmingly financed through household out-of-pocket payments.

46. Households OOP payments accounted for the largest share of expenditure at retailers and other providers of medical goods (62.7%). The remaining share was financed through compulsory health insurance schemes.

47. Current health expenditure of providers of preventive care was mainly paid for by governmental schemes (70.2%) and household OOP payments (26.9%).

48. Providers of health administration and financing were totally financed by governmental schemes.

Figure 10: Health expenditure by provider by financing scheme, Tianiin 2009



49. Governmental schemes financed mainly general hospitals (45.9%), providers of

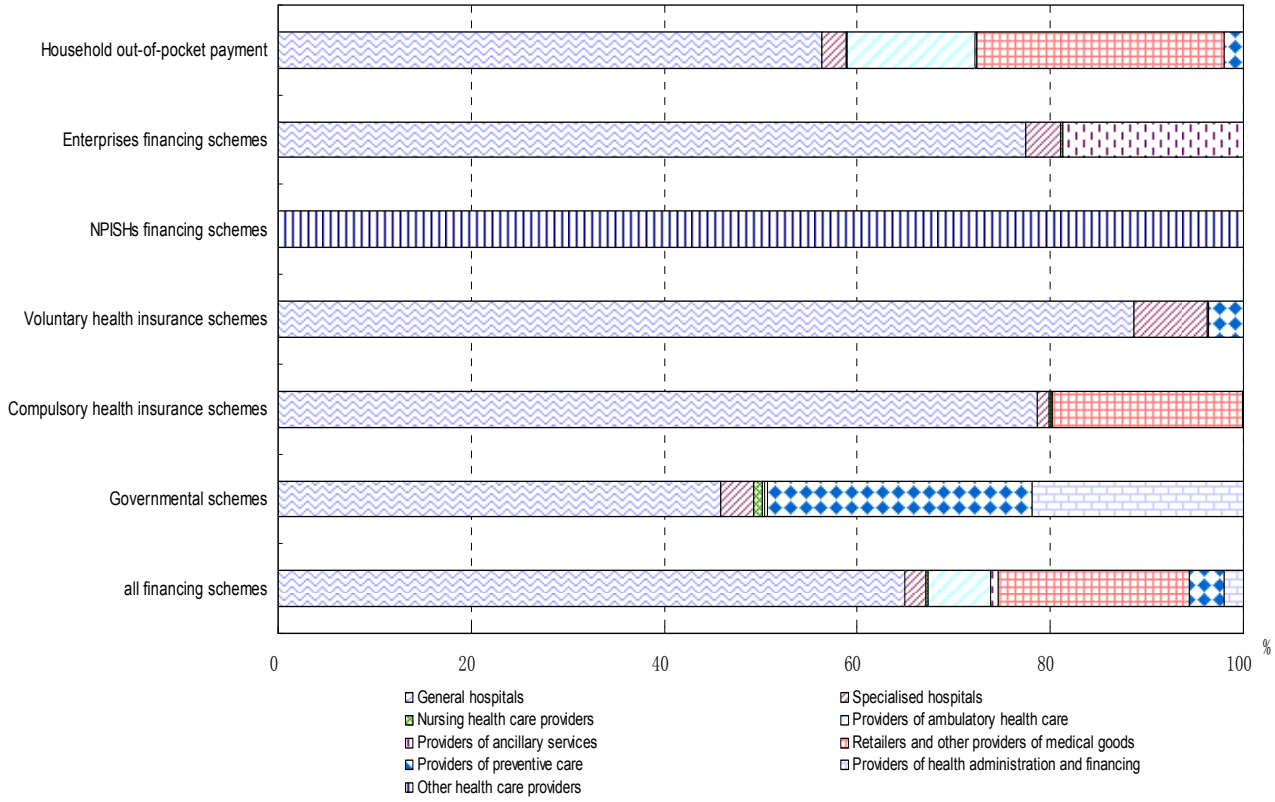
preventive care (27.5%), and providers of health administration and financing (21.8%) (Figure 11).

50. Compulsory health insurance schemes largely paid for general hospitals services (78.6%), and retailers and other providers of medical goods (19.7%).

51. A large part of voluntary health insurance schemes funds went to general hospitals (88.7%). Enterprises financing schemes provided funds for general hospitals and providers of ancillary services (77.5% and 18.7% respectively).

52. Household OOP payments mainly paid for general hospitals services (56.3%), retailers and other providers of medical goods (25.6%) and providers of ambulatory health care (13.2%).

Figure 11: Health expenditure by financing scheme by provider, Tianjin, 2009



Current health expenditure by function by financing schemes

53. Spending on inpatient care (8609.7 million RMB) was largely financed by compulsory health insurance schemes, and by household OOP payment (45.6% and 41.7% respectively) (Table B6 and Figure 12).

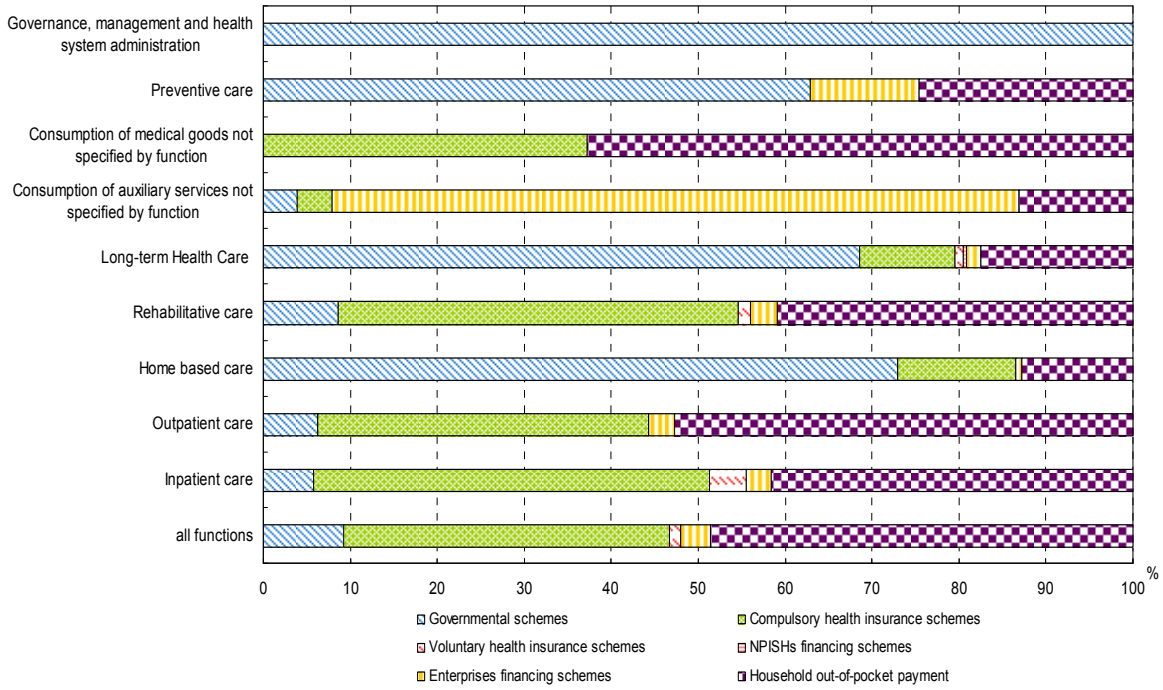
54. Spending on out-patient care (11208.7 million RMB) was mainly financed by household OOP payment and by compulsory health insurance schemes (52.7% and 38.1% respectively).

55. Over 4-% of expenditure on rehabilitative care was financed by OOP, while long-term health care was mainly financed by government schemes (68.5%).

56. Spending on consumption of auxiliary services not specified by function was largely financed by NPISH's financing schemes (79%), while spending on consumption of medical goods not specified by function (5420.5 million RMB) was in large part financed by household OOP payment (62.7%).

57. Preventive care was mainly financed by government schemes (62.9%), while 24.6% was financed by household OOP payment. Governance, management and health system administration was entirely financed by government schemes.

Figure 12: Health expenditure by function by financing scheme. Tianjin, 2009

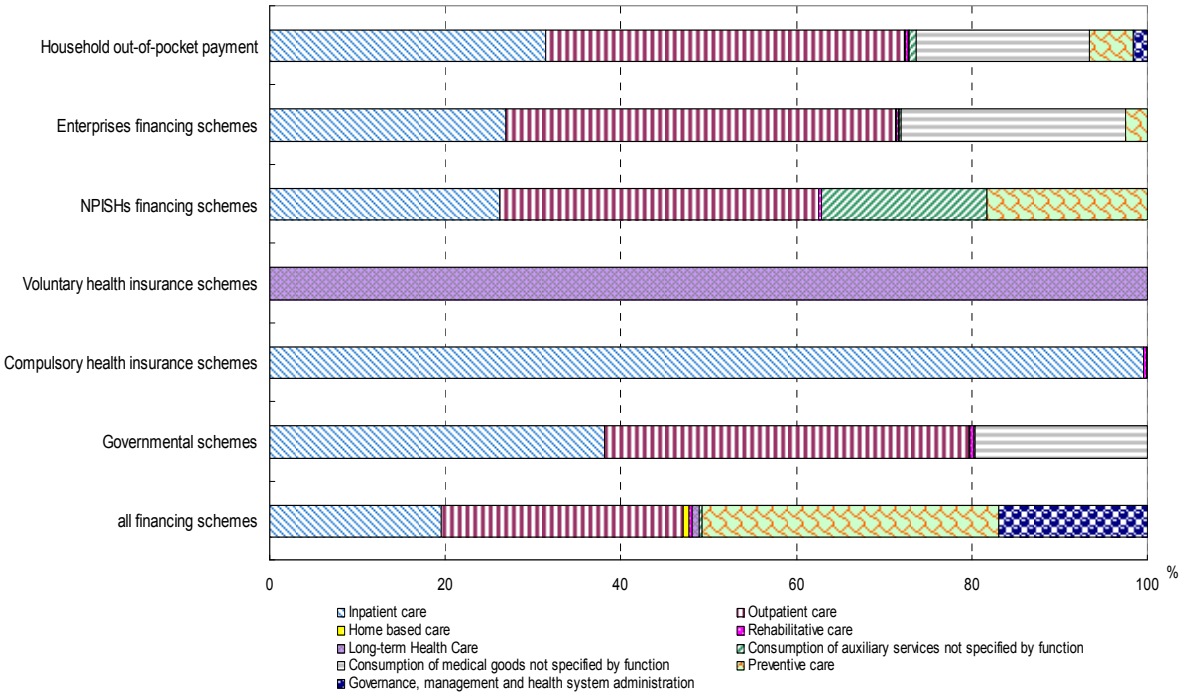


58. For current health expenditure of Tianjin, government schemes financed mainly personal curative services (47.8%, including 19.6 percentage points inpatient care and 27.5 percentage points outpatient care). Other significant areas of expenditure were preventive care (33.8%) and governance, management and health system administration (16.9%) (Figure 13).

59. Compulsory health insurance schemes mainly paid for curative services (79.8%) of which 38.2 percentage points was spent on inpatient care and 41.5 percentage points on outpatient care, while 19.7% was for consumption of medical goods not specified by function. Voluntary health insurance schemes mainly paid for inpatient care.

60. Household OOP paid for personal medical services and goods: 27.0% for inpatient care, 44.4% for outpatient care, and 25.6% for consumption of medical goods not specified by function.

Figure 13: Health expenditure by financing scheme by function, Tianjin, 2009



CONCLUSIONS

Key findings

61. China's THE was 1720.48 billion RMB (251.86 billion USD), or 5.13% of GDP in 2009. This percentage gradually increased for twenty years, and first exceeded 5.0% in 2009. Per capita health expenditure increased to 1289.00 RMB (188.70 USD) in 2009.

62. China's financing system is changing, the main source changing from the private sector to general government expenditure. The share of general government expenditure increased since 2002 as health funding from governments at all levels increased and several social insurance schemes were implemented. General government health expenditure was over 50% of THE in 2009, a percentage significantly below the average of OECD countries. Of general government expenditure, social security expenditure has increased since 2003, up 67% in 2009. This was mainly due to the development of the security systems, such as the New Rural Cooperative Medical System and the Urban Employee Basic Medical Insurance Scheme. The share of household OOP payments in private expenditure was 79% in 2009.

63. The share of current heath expenditure on hospitals increased steadily over the years to reach 66.9% in 2009. The share of ambulatory health providers declined, while the provision and administration of public health programs showed a decreasing trend before 2003, before increasing up to 8.50% in 2009 following the outbreak of the SARS epidemic. As a result of increasing acceptance of the need for self-care, the share of current expenditure on retail sales and other providers of medical goods increased rapidly over the period.

64. In 2010, a feasibility study of the revised SHA classifications was carried out in Tianjin. The results confirmed that the use of the revised SHA classifications was feasible.

65. There were many difficulties faced during the feasibility study. For example, revised classification systems required better understanding and more complex field surveys. For some indicators, it will be really difficult to obtain data in developing countries such as China. Compared to the current standard, the revised SHA allows more policy questions to be answered - such as the use of social health insurance funds, benefit issues of different groups of people and the resource costs of health services providers.

Main issues encountered in implementing SHA

66. Initially, China NHA specified its own definitional boundaries according to national policy needs. On release of OECD SHA, a new, dually compatible and coded NHA framework and classification system was developed.

67. Given the unique characteristics of China's health system, it had proven difficult to estimate all items of health expenditure according to ICHA. For example the village collective economy is not strictly government or social/private insurance according to the traditional definitions. There are also some functions which cannot be disaggregated, e.g., day care services, rehabilitative care, nursing care in general health facilities.

68. Due to a paucity of regular statistics, e.g., the distribution of private health insurance expenditures among different corporations, some of the results are not precise estimates. As an example, data are not routinely collected for facilities not financed and managed by MOH , thus statistics on those facilities are not precise.

69. Given the significant variations in health financing and health services provision among

different regions in China, some regional conditions cannot be generalized to the whole country. Therefore it is not possible to estimate total Chinese health expenditure according to the three axes for classification in SHA.

Future work

70. China's NHA work is now fully institutionalized within MOH. NHA estimates have been formally included in the national regular information dissemination system, reported to the National Bureau of Statistics, and published in the China Statistics Yearbook annually. To expand the heath account's application for policy-making, China will develop the data management and query system to improve the use of NHA data in China.

71. The NHA team promotes the development of sub-national health accounts, and will carry out the estimation of health account according to the revised SHA in some selected regions. This work will continue to encourage further support for national matrix health accounts.

72. At the national level, efforts will be made to further develop China's health accounts framework according to the basic framework and principles of the revised SHA. It is also aimed to develop and complete the health account estimation by financing source and financing scheme, as well as to start the estimation by resource cost, and to complete national health expenditure by function tables.

REFERENCES

China Health Economics Institute (2007). *China health accounts report 2007*.Beijing, China. China Health Economics Institute.

OECD (2000). *A System of health accounts: Version 1.0*. Paris: Organization for Economic Co-operation and Development.

World Health Organization (2003). *Guide to producing national health accounts*. Geneva, Switzerland: World Health Organization.

World Health Organization (2007). *World Health Report 2007: A safer future: Global public health security in the 21st century.* Geneva, Switzerland: World Health Organization.

ANNEX 1: METHODOLOGY

Data sources

73. Main sources for public expenditure:

- Ministry of Finance
- Ministry of Labor and Social Security
- China Statistics Yearbook, National Bureau of Statistics of China
- China Health Statistics Yearbook, Center for Information Statistic, Ministry of Health
- China Labor Statistics Yearbook, Ministry of Labor and Social Security
- Health Financial Report, Department of Planning and Finance, Ministry of Health
- China Agricultural Statistics Yearbook, Ministry of Agriculture
- New Rural Cooperative Medical System Statistics Report, Center for New Rural CMS Management and Research, Ministry of Health
- Other ministries related to health

74. Main sources for private expenditure:

- China Statistics Yearbook, National Bureau of Statistics of China
- China Urban Living and Price Yearbook, Department of Urban Society and Economic Statistics, National Bureau of Statistics of China
- China Rural Households Statistics Yearbook, Department of Rural Society and Economic Statistics, National Bureau of Statistics of China
- China Health Statistics Yearbook, Center for Information Statistic, Ministry of Health
- China Labor Statistics Yearbook, Ministry of Labor and Social Security
- China Floating Population Statistics Report, Bureau of Public Security Management, Ministry of Public Security
- China Population Statistics Yearbook, National Bureau of Statistics of China
- Chinese Red Cross Foundation

75. Ad hoc surveys of health care providers supplied additional data for estimation of health expenditure by the three dimensions as well as compilation of SHA tables.

76. Household surveys on health services utilization supplied additional data for breakdown of OOP payments and health insurance expenditure by provider and function.

Differences between classification of health expenditure in national practice and the IHCA / revised SHA classifications

77. To accommodate national policy analysis and meet the needs of international comparison, China's NHA system has been dually classified and coded since 1999. Those estimates are largely the same under both classification systems.

78. General government health expenditure excluding social security includes an item named *Village Collective Economy (VCE) health expenditur*e. *VCE* in China is an autonomous organization of villagers. The council is under the guidance of, and assisted by, the township government. Although it is not a government organization, it does have some administrative function. The income of VCE includes government subsidies and land or assets rent.

79. In China, it is not possible to separate the health expenditure of general hospitals, mental health hospitals and other specialized hospitals. Township health centers are also classified as general hospitals, although some of them are actually specialized health centers. Providers of ambulatory health care include clinics, health stations and nursing stations. This last category includes nursing agencies, dental clinics and other providers.

80. It is not possible to separately report health spending on day cases of curative care, long-term care, home care, and rehabilitative care services. Long-term nursing care services include services provided by sanatoria. Many functions cannot be further disaggregated, for example drug expenditure cannot be broken down into prescription drugs and OTC drugs.

81. Social health insurance expenditures by function and provider were classified by using data collected via household surveys undertaken in different reference years. However as the survey is carried out every five years (the latest one in 2008) figures in non-survey years need to be estimated.

Other methodological issues

82. The capital formation of public and private health facilities are estimated by the actual expenditure of that year in China, without capital depreciation. The Health Financial Report and the Health Statistical Report were used to estimate the capital formation of providers in the health sector and other sectors respectively. Data on "Gross Fixed Capital Formation and "Changes in Inventories" were estimated in Tianjin. Acquisitions less disposals of valuables were not estimated, as it is not common in China and data were not available. Intellectual property products – which include the intangible assets, computer software and databases – were not included as ä data source was not available. Changes in inventories included the storage of medical goods and equipment to be used in the event of catastrophic occurrence.

ANNEX 2: TABLES

Table A1: Total health expenditure by financing source in China

		First available year		Last available year	
		1990		2009	
		RMB billion	Percent	RMB billion	Percent
HF.1	General government	46.6	62.3	888.9	51.7
HF.1.1	General government excluding social security funds	18.0	24.0	–	–
HF.1.1.1	Central government	N/A	N/A	–	–
HF.1.1.2	Local governments	N/A	N/A	–	–
HF.1.2	Social security funds	28.6	38.3	–	–
HF.2	Private sector	28.2	37.7	831.6	48.3
HF.2.1	Private social insurance	–	–	–	–
HF.2.2	Private insurance enterprises(other than social insurance)	*	*	57.4	3.3
HF.2.3	Household out-of-pocket payment	26.7	35.7	657.1	38.2
HF.2.4	Non-profit institutions serving households(other than social insurance)	–	–	1.2	0.1
HF.2.5	Corporations(other than health insurance)	0.8	1.1	2.4	0.1
HF.2.9	Others	0.6	0.8	113.5	6.6
HF.3	Rest of world	–	–	–	–
	Total expenditure on health	*74.7*	*100*	*1720.5*	*100*

* Data not available but very minimal

Table A2: Current health expenditure by provider in China

		First available year		Last available year	
		1990		2009	
		RMB billion	percent	RMB billion	Percent
HP.1	Hospitals	49.6	63.5	1152.5	66.9
HP.2	Nursing and residential care facilities	0.8	1.0	5.4	0.3
HP.3	Providers of ambulatory health care	19.6	25.0	188.7	10.9
HP.4	Retail sale and other providers of medical goods	1.9	2.5	184.2	10.7
HP.5	Provision and administration of public health programs	6.0	7.7	146.4	8.5
HP.6	General health administration and insurance	0.3	0.4	37.8	2.2
HP.7	Other industries (rest of the economy)	-	-	7.9	0.5
HP.9	Rest of the word	-	-	-	-
Total	*Current health expenditure*	*78.2*	*100*	*1722.9*	*100*

Note: The results of the total health expenditure by financing and provider in China were different, because the data sources used are from different department records. In China, the total health expenditure by financing and providers were separately estimated, and the results were not adjusted and estimated through matrix tables.

Table B1: Total health expenditure by financing scheme in Tianjin, China

		2009	
		RMB million	Percent
HF.1	Governmental schemes and compulsory health insurance	13051.2	45.0
HF.1.1	Governmental schemes	2779.1	9.6
HF.1.2	Compulsory health insurance schemes	10277.2	35.4
HF.2	Voluntary health care payment schemes	1294.8	4.5
HF.2.1	Voluntary health insurance schemes	360.9	1.2
HF.2.2	NPISHs financing schemes	0.1	-
HF.2.3	Enterprises financing schemes	933.7	3.2
HF.3	Household out-of-pocket payment	13308.4	45.8
HF.4	Rest of the world financing schemes (non resident)	1373.4	4.7
	Total health expenditure	*29026.8*	*100*

Table B2: Current health expenditure by provider in Tianjin, China

		2009	
		RMB million	Percent
HP.1	Hospitals	18387.2	67.1
HP1.1	General hospitals	17778.6	64.9
HP1.2	Specialised hospitals	608.6	2.2
HP.2	Nursing health care providers	70.1	0.3
HP.3	Providers of ambulatory health care	1765.5	6.4
HP.4	Providers of ancillary services	221.5	0.8
HP.5	Retailers and other providers of medical goods	5420.5	19.8
HP.6	Providers of preventive care	993.9	3.6
HP.7	Providers of health administration and financing	554.2	2.0
Total	*Current health expenditure*	*27413.2*	*100*

Table B3: Current health expenditure by function in Tianjin, China

		2009	
		RMB million	Percent
HC.1	Curative care	19841.9	72.4
HC.1.1	Inpatient care	8609.7	31.4
HC.1.2	Day care	-	-
HC.1.3	Outpatient care	11208.8	40.9
HC.1.4	Home based care	23.4	0.1
HC.2	Rehabilitative care	105.2	0.4
HC.3	Long-term Health Care	28.3	0.1
HC.4	Consumption of auxiliary services not specified by function	221.5	0.8
HC.5	Consumption of medical goods not specified by function	5420.5	19.8
HC.6	Preventive care	1366.2	5
HC.7	Governance, management and health system administration	429.6	1.6
Total	*Current health expenditure*	*27413.2*	*100*

Table B.4 Current expenditure on health by function by provider in Tianjin, China (RMB, million)

Functions			Providers / Million of national currency	HP.1			HP.2	HP.3	HP.4	HP.5	HP.6	HP.7	HP.8	HP.9	HP.10	HP.11	
					HP.1.1	HP.1.2											
				Hospitals	General hospitals	Specialised hospitals	Nursing health care providers	Providers of ambulatory health care	Providers of ancillary services	Retailers and other providers of medical goods	Providers of preventive care	Providers of health administration and financing	Households	Other health care providers	Rest of Economy	Rest of the world	Total
HC.1			Curative care	17990.1	17381.5	608.6	-	1761.6	-	-	90.2	-	-	-	-	-	19841.9
	HC.1.1		Inpatient care	8519.5	8151.5	368.0	-	-	-	-	90.2	-	-	-	-	-	8609.7
		HC.1.1.1	General	7519.2	7519.2	-	-	-	-	-	-	-	-	-	-	-	7519.2
		HC.1.1.2	Specialised	1000.3	632.3	368.0	-	-	-	-	90.2	-	-	-	-	-	1090.5
	HC.1.2		Day care	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	HC.1.3		Outpatient care	9447.3	9206.8	240.6	-	1761.4	-	-	-	-	-	-	-	-	11208.8
		HC.1.3.1	General	8533.7	8533.7	-	-	1425.0	-	-	-	-	-	-	-	-	9958.7
		HC.1.3.2	Dental	275.5	275.5	-	-	308.5	-	-	-	-	-	-	-	-	584.0
		HC.1.3.3	Specialised	638.2	397.6	240.6	-	27.9	-	-	-	-	-	-	-	-	666.1
	HC.1.4		Home based care	23.2	23.2	-	-	0.2	-	-	-	-	-	-	-	-	23.4
	HC.1.5		Curative care n.e.c.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HC.2			Rehabilitative care	63.1	63.1	-	42.1	-	-	-	-	-	-	-	-	-	105.2
HC.3			Long-term Health Care	-	-	-	28.0	-	-	-	-	-	-	0.3	-	-	28.3
HC.4			Consumption of auxiliary services not specified by function	-	-	-	-	-	221.5	-	-	-	-	-	-	-	221.5

	HC.4.1		Laboratory services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HC.4.1.1	Laboratory diagnostics	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HC.4.1.2	Blood, sperm and organ bank services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	HC.4.2		Imaging services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	HC.4.3		Patient transportation	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	HC.4.4		Ancillary services non specified by function n.e.c.	-	-	-	-	-	46.5	-	-	-	-	-	-	-	46.5
HC.5			Consumption of medical goods not specified by function	-	-	-	-	-	-	5420.5	-	-	-	-	-	-	5420.5
HC.6			Preventive care	334.0	334.0	-	-	3.9	-	-	903.7	124.6	-	-	-	-	1366.2
HC.7			Governance, management and health system administration	-	-	-	-	-	-	-	-	429.6	-	-	-	-	429.6
	HC.7.1		Governance and health system administration	-	-	-	-	-	-	-	-	429.6	-	-	-	-	429.6
	HC.7.2		Administration of health financing	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	HC.7.3		Other administrative costs not specified by kind (n.s.k.)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Total	*18387.2*	*17778.6*	*608.6*	*70.1*	*1765.5*	*221.5*	*5420.5*	*993.9*	*554.2*	-	*0.3*	-	-	*27413.2*

Table B.5 Current expenditure on health by provider by financing scheme in Tianjin, China (RMB, million)

Financing schemes			HF.1	HF.1.1	HF.1.2	HF.2	HF.2.1	HF.2.2	HF.2.3	HF.3	HF.3.1	HF.3.2	HF.4	
Providers		Million of national currency	Governmental schemes and compulsory health insurance	Governmental schemes	Compulsory health insurance schemes	Voluntary health care payment schemes	Voluntary health insurance schemes	NPISHs financing schemes	Enterprises financing schemes	Household out-of-pocket payment	Out-of-pocket excluding cost sharing	Cost sharing with third-party payers	Rest of the world financing schemes (non resident)	Total
HP.1		Hospitals	9455.8	1249.4	8206.4	1104.3	347.5	-	756.8	7827.1	4362.3	3464.8	-	18387.2
	HP.1.1	General hospitals	9239.8	1165.0	8074.9	1043.4	320.2	-	723.2	7495.4	4118.4	3377.1	-	17778.6
	HP.1.2	Specialised hospitals	216.0	84.5	131.5	60.9	27.3	-	33.6	331.7	243.9	87.8	-	608.6
HP.2		Nursing health care providers	45.0	24.1	20.9	2.2	0.3	-	1.9	22.8	13.8	9.0	-	70.1
HP.3		Providers of ambulatory health care	3.9	3.9	-	-	-	-	-	1761.6	1761.6	-	-	1765.5
HP.4		Providers of ancillary services	17.4	8.6	8.8	175.0	-	-	175.0	29.1	26.8	2.2	-	221.5
HP.5		Retailers and other providers of medical goods	2019.7	-	2019.7	-	-	-	-	3400.7	3400.7	-	-	5420.5
HP.6		Providers of preventive care	713.7	697.3	16.4	13.2	13.2	-	-	267.0	243.2	23.8	-	993.9
HP.7		Providers of health administration and financing	554.2	554.2	-	-	-	-	-	-	-	-	-	554.2
HP.8		Households	-	-	-	-	-	-	-	-	-	-	-	-
HP.9		Other health care providers	0.2	0.2	-	0.1	-	0.1	-	-	-	-	-	0.3
HP.10		Rest of Economy	-	-	-	-	-	-	-	-	-	-	-	-
HP.11		Rest of the world	-	-	-	-	-	-	-	-	-	-	-	-
		Total	*12810.1*	*2537.9*	*10272.2*	*1294.8*	*360.9*	*0.1*	*933.7*	*13308.4*	*9808.5*	*3499.9*	-	*27413.2*

Table B.6 Current expenditure on health by function by financing scheme in Tianjin, China (RMB, million)

Financing schemes				HF.1	HF.1.1	HF.1.2	HF.2	HF.2.1	HF.2.2	HF.2.3	HF.3	HF.3.1	HF.3.2	HF.4	
Functions			Million of national currency	Governmental schemes and compulsory health insurance	Governmental schemes	Compulsory health insurance schemes	Voluntary health care payment schemes	Voluntary health insurance schemes	NPISHs financing schemes	Enterprises financing schemes	Household out-of-pocket payment	Out-of-pocket excluding cost sharing	Cost sharing with third-party payers	Rest of the world financing schemes (non resident)	Total
HC.1			Curative care	9404.6	1212.4	8192.2	943.1	359.1	-	584.0	9494.2	6017.6	3476.6	-	19841.9
	HC.1.1		Inpatient care	4419.6	496.2	3923.4	603.5	359.1	-	244.3	3586.6	1793.3	1793.3	-	8609.7
		HC.1.1.1	General	3898.0	388.5	3509.5	514.5	299.0	-	215.5	3106.7	1562.8	1543.9	-	7519.2
		HC.1.1.2	Specialised	521.7	107.7	413.9	89.0	60.2	-	28.8	479.9	230.5	249.4	-	1090.5
	HC.1.2		Day care	-	-	-	-	-	-	-	-	-	-	-	-
	HC.1.3		Outpatient care	4964.7	699.1	4265.6	339.5	-	-	339.5	5904.5	4222.9	1681.6	-	11208.7
		HC.1.3.1	General	4558.1	626.6	3931.5	292.9	-	-	292.9	5107.7	3549.0	1558.7	-	9958.7
		HC.1.3.2	Dental	137.1	2-	117.1	12.1	-	-	12.1	434.8	396.2	38.5	-	584.0
		HC.1.3.3	Specialised	269.6	52.5	217.1	34.4	-	-	34.4	362.1	277.7	84.4	-	666.1
	HC.1.4		Home based care	20.3	17.1	3.2	0.2	-	-	0.2	3.0	1.4	1.6	-	23.4
	HC.1.5		Curative care n.e.c.	-	-	-	-	-	-	-	-	-	-	-	-
HC.2			Rehabilitative care	57.4	9.1	48.3	4.8	1.5	-	3.3	43.0	23.6	19.4	-	105.2
HC.3			Long-term Health Care	22.5	19.4	3.1	0.8	0.3	0.1	0.5	5.0	3.4	1.6	-	28.3

HC.4			Consumption of auxiliary services not specified by function	17.4	8.6	8.8	175.0	-	-	175.0	29.1	26.8	2.2	-	221.5
	HC.4.1		Laboratory services	-	-	-	175.0	-	-	175.0	-	-	-	-	175.0
	HC.4.2		Imaging services	-	-	-	-	-	-	-	-	-	-	-	-
	HC.4.3		Patient transportation	-	-	-	-	-	-	-	-	-	-	-	-
	HC.4.4		Ancillary services non specified by function n.e.c.	17.4	8.6	8.8	-	-	-	-	29.1	26.8	2.2	-	46.5
HC.5			Consumption of medical goods not specified by function	2019.7	-	2019.7	-	-	-	-	3400.7	3400.7	-	-	5420.5
HC.6			Preventive care	858.8	858.8	-	171.0	-	-	171.0	336.4	336.4	-	-	1366.2
HC.7			Governance, management and health system administration	429.6	429.6	-	-	-	-	-	-	-	-	-	429.6
	HC.7.1		Governance and health system administration	370.9	370.9	-	-	-	-	-	-	-	-	-	370.9
	HC.7.2		Administration of health financing	58.7	58.7	-	-	-	-	-	-	-	-	-	58.7
	HC.7.3		Other administrative costs not specified by kind (n.s.k.)	-	-	-	-	-	-	-	-	-	-	-	-
			Total	*12810.1*	*2537.9*	*10272.2*	*1294.8*	*360.9*	*0.1*	*933.7*	*13308.4*	*9808.5*	*3499.9*	-	*27413.2*