Universal Health Coverage Assessment

Taiwan

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Universal Health Coverage Assessment:

Taiwan

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Introduction

This document provides a preliminary assessment of aspects of the Taiwanese health system relative to the goal of universal health coverage, with a particular focus on the financing system.

In the 2010 World Health Report, universal health coverage is defined as providing everyone in a country with financial protection from the costs of using health care and ensuring access to the health services they need (World Health Organisation 2010). These services should be of sufficient quality to be effective.

This document presents data that provide insights into the extent of financial protection and access to needed health services in Taiwan.

Key health care expenditure indicators

This section examines overall levels of health expenditure in Taiwan and identifies the main sources of health financing (Table 1).[2] In 2012, total health expenditure amounted to 6.9% of Taiwan's GDP, an amount that was considerably lower than the average of 12% for other high-income countries and also lower than the global average of 9.2%.

Public allocations to fund the health sector (including national health insurance) stood at about 20% of total government expenditure. This demonstrates government commitment to funding the health sector and was higher than both the global average of 15% as well as the average of 17% for other high-income countries.

Table 1: National Health Accounts indicators of health care expenditure and sources of finance in Taiwan (2012)

Indicators of the level of health care expenditure	
1. Total expenditure on health as % of GDP	*6.9%
2. General government expenditure on health as % of GDP**	3.8%
3. General government expenditure on health as % of total government expenditure	20.2%
4a. Per capita government expenditure on health at average exchange rate (US$)	784.4
4b. Per capita government expenditure on health (PPP $)	1,495.1
Indicators of the source of funds for health care	
5. General government expenditure on health as % of total expenditure on health	*58.4%
6. Private expenditure on health as % of total expenditure on health	* 41.6%
7. External resources for health as % of total expenditure on health	-
8. Out-of-pocket expenditure on health as % of total expenditure on health	*25.8%
9. Out-of-pocket expenditure on health as % of GDP	1.7%
10. Private prepaid plans on health as % of total expenditure on health	15.8%

Notes:*The figure is based on the author's adjustment of data from Ministry of Health and Welfare (2012) to reflect out-of-pocket expenditure more accurately and include private prepaid plans.
**This includes general tax-funded health spending as well as payroll tax-funded mandatory health insurance.
Source: Data for Taiwan are not available from the World Health Organisation's Global Health Expenditure Database. Consequently, the estimates in this table were calculated by the author using data from Ministry of Health and Welfare (2012), The Life Insurance Association (2012) and Council for Economic Planning and Development (2013). The purchasing power parity estimate was derived from the IMF (implied PPP conversion rate). Estimates for private insurance payment and household direct payment were derived using methodology in Lu (2007).

[2] The data quoted in this section all derive from the author's calculations based on data from Ministry of Health and Welfare (2012), The Life Insurance Association (2012) and Council for Economic Planning and Development (2013).

However, per capita government expenditure on health was around $1,495 (in terms of purchasing power parity), considerably lower than the high-income country average of $2,737 although more than double the global average of $652. Government health expenditure translated into 3.8% of GDP. This was much lower than the high-income country average of 7.2% and even the global average of 5.3%.

Out-of-pocket payments played a moderate role (at about 26% of total financing). This was slightly higher than the both the global average of 21% and the 20% limit suggested by the 2010 World Health Report to ensure that financial catastrophe and impoverishment as a result of accessing health care become negligible (World Health Organisation 2010).

In 2012, private health insurance played a significant role at 16% of total health sector financing. This is close to the global average of 15%. As with most high-income countries, there is no reported external assistance for health in Taiwan.

Structure of the health system according to health financing functions

Figure 1 provides a summary of the structure of the Taiwanese health system, depicted according to the health care financing functions of revenue collection, pooling and purchasing. Each block represents the percentage share of overall health care expenditure accounted for by each category of revenue source, pooling organisation and purchasing organisation. Unfortunately expenditure data by type of provider are not available in the Figure, but health care provision in Taiwan is discussed in the text.

Revenue collection

In 2012, the majority (90%) of general government expenditure was financed through National Health Insurance (NHI).[3] The remaining portion was financed through direct (6%) and indirect (4%) taxes.

Before the introduction of NHI, Taiwan's government had already established four major social insurance programmes, which closely modelled the social insurance approach of Germany and Japan. These programs were Labour Insurance (in 1950), Government Employee Insurance (in 1958) (which consisted of a number of component schemes), Farmers' Insurance (in 1985) and Low-Income Household Insurance (in 1990). Except for the latter, these programs were mainly employment-based.

Most workers in the formal sector were covered, but their dependents were not. The exception was government employees whose spouses (in 1982), parents (in 1989) and children (in 1992) were also covered. Collectively these programs covered over half (57%) of the total population by 1995, compared to 16% in 1980. Most of the population that was at high risk of ill-health – such as children, women and the elderly - remained uninsured.

NHI was introduced in 1995 to achieve universal financial protection and access to services to its population of 23 million people. NHI is a mandatory health insurance scheme largely financed through premiums (in the form of a payroll tax), supplemented by direct government funding. Of total health spending, NHI is the largest financing source for Taiwan's health system, accounting for 52% in 2012.

Of the total premium income in 2012, insured people paid 37% and employers paid 38% (including 8% paid by the government as an employer). Government paid the remaining 25% as direct subsidies to formal sector workers and vulnerable populations.

In 2012, the NHI premium was 5.17% of the payroll, shared between employers, employees and the government according to percentages that differ by occupational status. Low-income households and poor veterans are exempted from premium contributions following a very strict means test. Only the self-employed are not subsidised.

To prevent employers from discriminating against workers with large families, employers need only pay for the worker plus 0.7 of a dependent (the industry-wide average number of dependents per worker), while the worker has to pay the premium for himself/herself plus that for up to three dependents.

The government shoulders the annual operating cost of NHI, which, in 2012, was around 1.1% (capped by law at 3.5%) of its total expenditure. In other words, the collected premiums are earmarked to cover exclusively the health care expenditures incurred.

The financial sustainability of NHI is questionable due to the fact that NHI's revenue base has not been able to keep pace with GDP growth since 1998. To resolve financial insolvency problems and enhance equity in premium

[3] Different countries use the terms 'national health insurance,' 'social health insurance' and 'social security' differently to describe different types of mandatory health insurance. In each country assessment in this series, the term applied is the one commonly in use in the country in question. In Taiwan, the term NHI refers to mandatory health insurance that covers close to the entire population and is funded largely through pay-roll contributions supplemented by taxes.

collection, at the beginning of 2013 NHI adopted a dual-track premium collection system by placing an additional 2% tax levy on six categories of non-payroll income (that is, a supplementary premium) on top of a reduced 4.91% tax levy on payroll (that is, the basic premium).

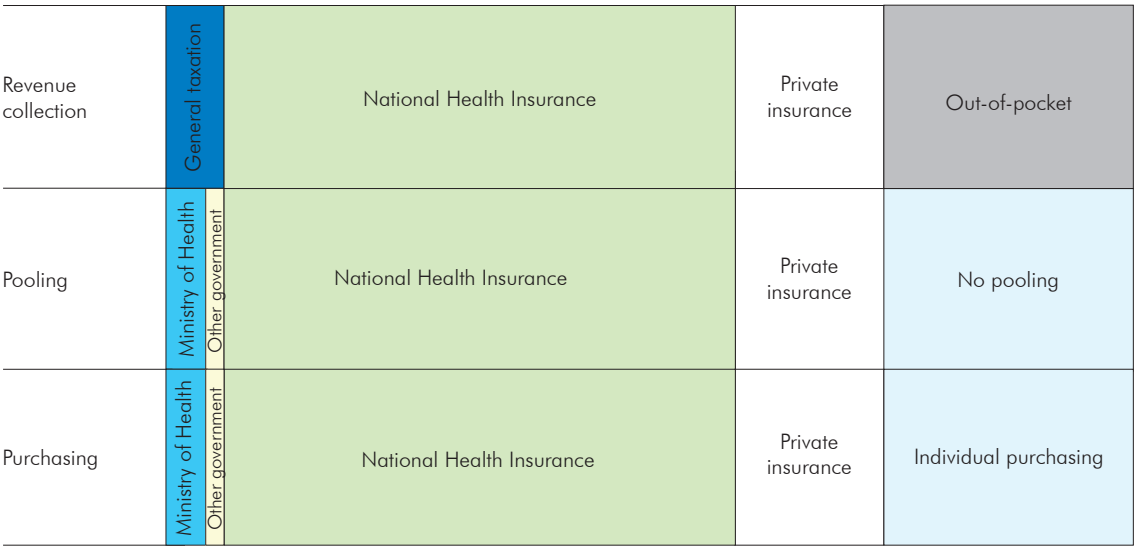
Most of government's contribution to health spending is channelled through NHI, either in the form of subsidies or contributions as an employer (for government employees). In combination these accounted for 33% of NHI revenues in 2012. Government contributed a further 6% of total health spending (through direct and indirect taxes) to fund, for example, health administration, public health and preventive medicine (such as vaccination, disease screening, etc.). This percentage had decreased from 13% of total health spending in 1995 as a result of the introduction of NHI.

Despite the comprehensive package provided by NHI, out-of-pocket payments remain a sizeable source of revenue (at 26% of total health spending in 2012). However, out-of-pocket payments did decline as a percentage of total health expenditure with the introduction of NHI, from a high of over 40% in the early 1990s (see Figure 2). In addition, the extent of out-of-pocket spending is partly because the household survey on which these statistics are based, adopts a rather broad definition for out-of-pocket payments, including the purchase of food supplements.

It is also due to the modest co-payments at point of service required under NHI. These co-payments are intended to constrain growing utilization rates prompted by the guaranteed access provided by NHI. The co-payment fee is the equivalent of US$2 for each visit to a clinic, and for outpatient services with referral, it is US$7 for each visit to a medical centre (or US$12 without referral from a primary care provider). For inpatient services, a co-payment ranging from 5% to 30% of the total hospital bill is applied according to the type of wards (acute or chronic) and length of stay, but co-payments are capped. The cap represents 6% of Gross National Income per capita in the previous year (US$1,000 in 2014) for each hospital stay for a particular condition, and a total of about 10% of Gross National Income per capita in the previous year (US$1,700 in 2014) each year. Low-income households are exempt from co-payment, amounting to just over 1% of the population.

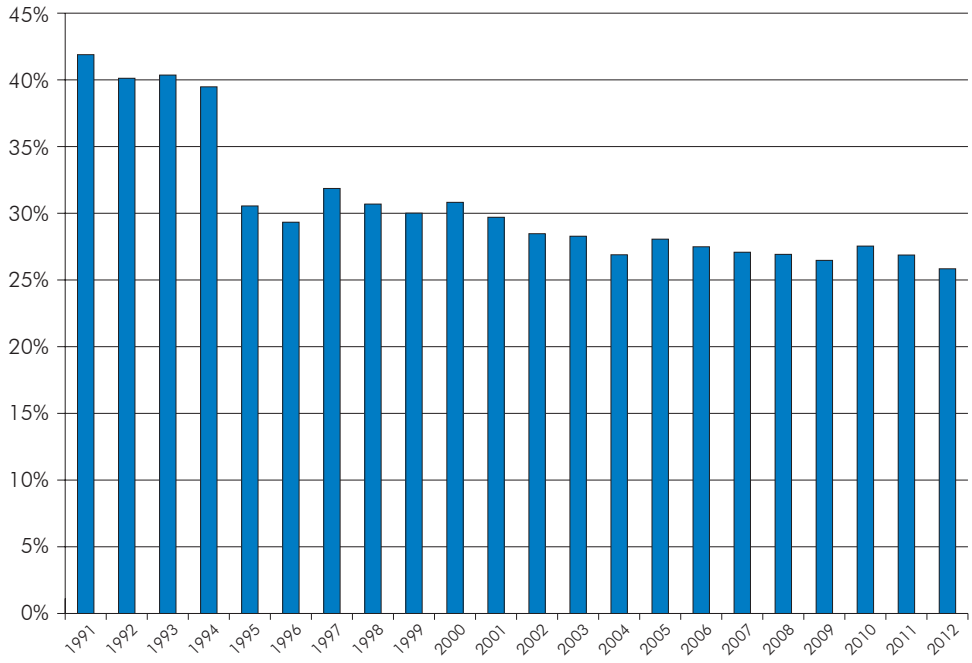
There is a growing market for voluntary private insurance since the introduction of NHI. The provision of NHI seems to have generated impacts on saving and consumption patterns (Chou, Liu and Hammitt 2003, Sheu and Lu 2014). This in turn has freed up resources that people have used to purchase supplementary private health insurance (in the form of cash benefits) to pay for amenities (such as hospital room upgrades) and services not covered by NHI. Private health insurance premiums are charged on a flat rate basis, regardless of income.

Figure 1: A function summary chart for Taiwan (2012)



Note: Data are not available for the expenditure split between public and private providers.
Source: Ministry of Health and Welfare (2012)

Figure 2: The decline in out-of-pocket payments in Taiwan since the introduction of National Health Insurance in 1995



Source: Ministry of Health and Welfare (2012)

Pooling

As Figure 1 shows, a significant proportion of the total financing system is not pooled because of the high level of direct out-of-pocket payments.

However, Taiwan adopts a single-payer approach in operating NHI. This is a very important feature of the Taiwanese system and means that NHI acts as a monopsony in the health care market place. This makes it able, within limits, to dictate terms to its suppliers when purchasing services for the entire insured population. Accordingly, the NHI has set a uniform fee schedule and introduced a number of payment reforms. Balance billing is banned (that is, providers are not allowed to charge patients an amount above the uniform fee) and patients are often required to sign an informed consent form when a provider charges them for medicines or procedures not covered by NHI.

Although there is a growing trend to purchase supplementary health insurance for services and amenities not covered by NHI, the voluntary private insurance pool (16% of total health spending) remains relatively small. It is independent from the NHI pool and is not in competition with NHI.

NHI is mandatory for all citizens and legal residents. However, anyone (and not only those with supplementary private insurance) can choose to be treated as a privately paying patient. This normally happens when people seek care from providers who choose not to contract with NHI, or from NHI-contracted providers who also offer VIP services to paying patients.

Purchasing

Although the insured are classified into six groups based on their occupational status, everyone is entitled to the same range of service benefits. The service package is comprehensive and covers preventive and curative medical services, prescription drugs, dental services, Chinese medicine therapies, and home nursing care.

The National Health Insurance Administration (the government agency that runs the NHI scheme) pays provider institutions (such as hospitals and clinics) mainly on a fee-for-service basis according to a uniform fee schedule it established for its contracted providers. Hospitals decide how to pay their doctors: most hospital doctors are often paid on a salaried basis with bonus

payments based on productivity. Private practitioners are mainly reimbursed on a fee-for-service basis. Providers are paid higher fees if they are accredited at a higher level, which gives them an incentive to upgrade themselves by expanding their capacity.

Due to its financial difficulties, NHI has been focusing most of its efforts on reforming the payment system. With the market power it has at its disposal through the single-payer system, it has been able to experiment with various reforms. Starting in 1998, the NHI Administration gradually set up separate global budgets for dental services, Chinese medicine therapies, and primary care services (i.e. visits to doctors practising in their own clinics).

In 2002, Taiwan created a separate global budget for hospital outpatient and inpatient services despite vociferous opposition from the hospitals. These global budgets are determined the year before and annual growth is negotiated between the NHI Administration, consumer representatives and the provider.[4]

In addition, in 2010, NHI promulgated the Taiwan Diagnosis Related Groups system, which covers 164 groups, representing 17% of NHI's inpatient budget in 2011. This system is intended to cover a complete list of 1,029 groups by 2015. The system has been the subject of heated debate because it reduces medical autonomy and places even more pressure on allowed expenditures. Due to strong opposition from medical professionals, the second phase, which covers 254 groups, was not put into practice until July 2014. In total, the DRGs currently practiced account for 45% of total DRGs, and 27% of the total inpatient budget (Ministry of Health and Welfare 2014).

Provision

Taiwan has a plural, market-oriented health care delivery system, reflecting its free-enterprise economy. The supply of services is generally sufficient but still concentrated in urban areas.

As providers are reimbursed by a uniform fee schedule, the nature of competition is on the basis of quality and amenities, rather than on price. Hospital ownership is mixed, with public hospitals accounting for 28% of all beds (and 16% of all hospitals) in 2012. Since 2000, roughly 63% of physicians have been salaried employees of hospitals, with the rest being fee-for-service private practitioners. Chinese medicine practitioners, who are licensed medical professionals although not all have undergone a formally structured education, mainly practice in privately owned clinics. Over the years, hospitals have developed large outpatient departments and affiliated clinics for primary care in order to maintain inpatient volume and compete with private practitioners who operate free-standing clinics with beds.

There is no compulsory gate-keeping mechanism, although people do pay a slightly higher co-payment for seeking care at the hospital without being referred by a primary care provider. The NHI-insured in Taiwan enjoy complete freedom of choice with respect to health care provider. As a result, patients tend to queue up at medical centres, even for minor illnesses, by-passing the smaller clinics. The public generally view NHI as an entitlement and see informal payment as a way to gain preferential treatment by providers, although some hospitals ban the practice.

Financial protection and equity in financing

A key objective of universal health coverage is to provide financial protection for everyone in the country. Insights into the existing extent of financial protection are provided through indicators such as the extent of catastrophic payments and the level of impoverishment due to paying out-of-pocket for health services. This section analyses these indicators for Taiwan and then moves on to assess the overall equity of the health financing system.

Catastrophic payment indicators

Using various thresholds of household expenditure for assessing catastrophic payments, Table 2 shows that between 0.5% and 9% of the population incurred catastrophic spending in Taiwan in 2007 as a result of accessing health care. Wagstaff and van Doorslaer (2003) make the point that this method can understate the actual problem because it may not capture the reality that there are people who do not utilize health services when needed because they are unable to afford out-of-pocket payments at all. However, in Taiwan it is likely that there are very few people who are not able to afford the modest co-payment, especially as overall utilisation rates are very high.

As Table 2 shows, catastrophic payments in Taiwan mainly affected poorer households as revealed by a higher

[4] The way the global budget operates under a fee-for-service system is as follows: the unit of the uniform fee schedule is points; the payment made to a provider is the product of the point value multiplied by the total number of points claimed; the point value is computed by taking the allocated quarterly budget divided by the total number of points filed in the specific quarter. If the total number of points filed exceeds the allocated budget (that is, where the point value is less than 1), then the provider essentially gets a lower fee.

proportion for the weighted headcount compared to the un-weighted headcount (except for the 40% threshold of non-food expenditure.) This may be because co-payments are charged at a flat rate, representing a bigger proportion of household expenditures for poor households than for rich. The fact that this pattern is reversed for the catastrophic payment gap index suggests that poor households are more likely to incur catastrophic payments with a rather modest gap compared to their rich counterparts. This may be because, aside from co-payments at point of service, higher-income people are more likely to incur out-of-pocket payment for amenities.

The big differences between the calculations based on gross versus non-food expenditure can be attributed to the proportion of household expenditure devoted to food. For high-income economies such as Taiwan, food expenditure accounts for a relatively smaller share of household expenditure than in low- or middle-income economies.

Impoverishment indicators

While the extent of catastrophic payments indicates the relative impact of out-of-pocket payments on household welfare, the absolute impact is shown by the impoverishment effect. As Taiwan is a high-income economy, none of the World Bank poverty lines is appropriate for assessing impoverishment due to paying for health care out-of-pocket in Taiwan. Consequently, Table 3 uses the national poverty line[5] of USD 3,459 (per year).

Table 2: Catastrophic payment indicators for Taiwan (2007)*

	Threshold budget share	
	10%	15%
Calculations based on gross household expenditure (including food)		
Catastrophic payment headcount index (the percentage of households whose out-of-pocket payments for health care as a percentage of household consumption expenditure exceeded the threshold)	8.78%	3.77%
Weighted headcount index**	9.42%	3.98%
Catastrophic payment gap index (the average amount by which out-of-pocket health care payments as a percentage of household consumption expenditure exceed the threshold)	0.62%	0.33%
Weighted catastrophic gap index**	0.62%	0.31%
Calculations based on non-food household expenditure		
	Threshold budget share	
	25%	40%
Catastrophic payment headcount index (the percentage of households whose out-of-pocket payments for health care as a percentage of household consumption expenditure exceeded the threshold)	1.87%	0.52%
Weighted headcount index**	2.06%	0.47%
Catastrophic payment gap index (the average amount by which out-of-pocket health care payments as a percentage of household consumption expenditure exceed the threshold)	0.21%	0.06%
Weighted catastrophic gap index**	0.20%	0.05%

Notes: *Financial catastrophe is defined as household out-of-pocket spending on health care in excess of the threshold of 10% or 15% of gross household expenditure (i.e. including expenditure on food), or 25% or 40% of non-food household expenditure
**The weighted headcount and gap indicates whether it is the rich or poor households who mostly bear the burden of catastrophic payments. If the weighted index exceeds the un-weighted index, the burden of catastrophic payments falls more on poorer households.

Source: Author's calculations based on data from Directorate-General of Budget, Accounting and Statistics (2007)

[5] The national poverty line was computed based on 60% of national average consumption expenditure per person. The pre-payment headcount assessed by the national poverty line is much higher than the government-released poverty rate (which is the proportion of households eligible for social assistance) for two reasons: 1) the poverty line is not the only criterion adopted by government to identify low-income households, which includes an in-depth means test; and 2) there is not really a 'national poverty line' (instead, there are different poverty lines for different cities and counties according to the respective household consumption/expenditure levels and distributions).

In Taiwan, about 13% lived below the national poverty line (see Table 3). An extra 3% dropped into poverty respectively as a result of paying out-of-pocket when accessing health services. This translated into between 690,000 people per year falling into poverty respectively because of out-of-pocket expenditure on health care.

The normalised poverty gap (also shown in Table 3) measures the percentage of the poverty line necessary to raise an individual who is below the poverty line to that line. The difference between the prepayment and the post-payment poverty gaps was relatively low at 0.7%.

Equity in financing

Equity in financing is strongly related to financial protection (as described by the indicators above) but is a distinct issue and health system goal. It is generally accepted that financing of health care should be according to the ability to pay.

A 'progressive' health financing mechanism is one in which the amount richer households pay for health care represents a larger proportion of their income. Progressivity is measured by the Kakwani index: a positive value for the index means that the mechanism is progressive; a negative value means that poorer households pay a larger proportion of their income and that the financing mechanism is therefore regressive. Table 4 provides an overview of the distribution of the burden of financing the Taiwanese health system across different socio-economic groups (i.e. the financing incidence) as well as the Kakwani index for each financing mechanism. Figure 2 shows how the financing incidence changed between 1994 (the year before NHI was implemented) and 2012.

Overall, the Taiwanese financing system was very slightly progressive in 2012. Particularly direct, but also indirect, taxes were progressive. However, while direct taxes had become more progressive since 1994 (the year before the implementation of NHI), indirect taxes had become less progressive.

NHI was slightly progressive in 2012 as a result of an increase in the premium contribution rate and an expansion of the taxable wage base in 2010. This represented an improvement from the early years of NHI when it was very regressive.

Commercial insurance, by way of contrast, had become less progressive over the years although it was still far more progressive than NHI. As supplementary private health insurance has gained wide popularity over the years, with more and more people of various income levels joining, it is not surprising to see a declining trend in its progressivity.

Out-of-pocket payments were proportionately distributed between the poor and the rich in 2012 (because, although the Kakwani index was negative, this was statistically insignificant). The situation in 2012 was much improved compared to the first decade after the implementation of NHI when out-of-pocket payments were heavily regressive. This was probably due to the increased take-up of supplementary private insurance.

Table 3: Impoverishment indicators for Taiwan (2007)

	National poverty line*
Pre-payment poverty headcount	13.31%
Post-payment poverty headcount	16.32%
Percentage point change in poverty headcount (pre- to post-payment)	3.02%
Pre-payment normalised poverty gap	2.20%
Post-payment normalised poverty gap	2.93%
Percentage point change in poverty gap (pre- to post-payment)	0.73%

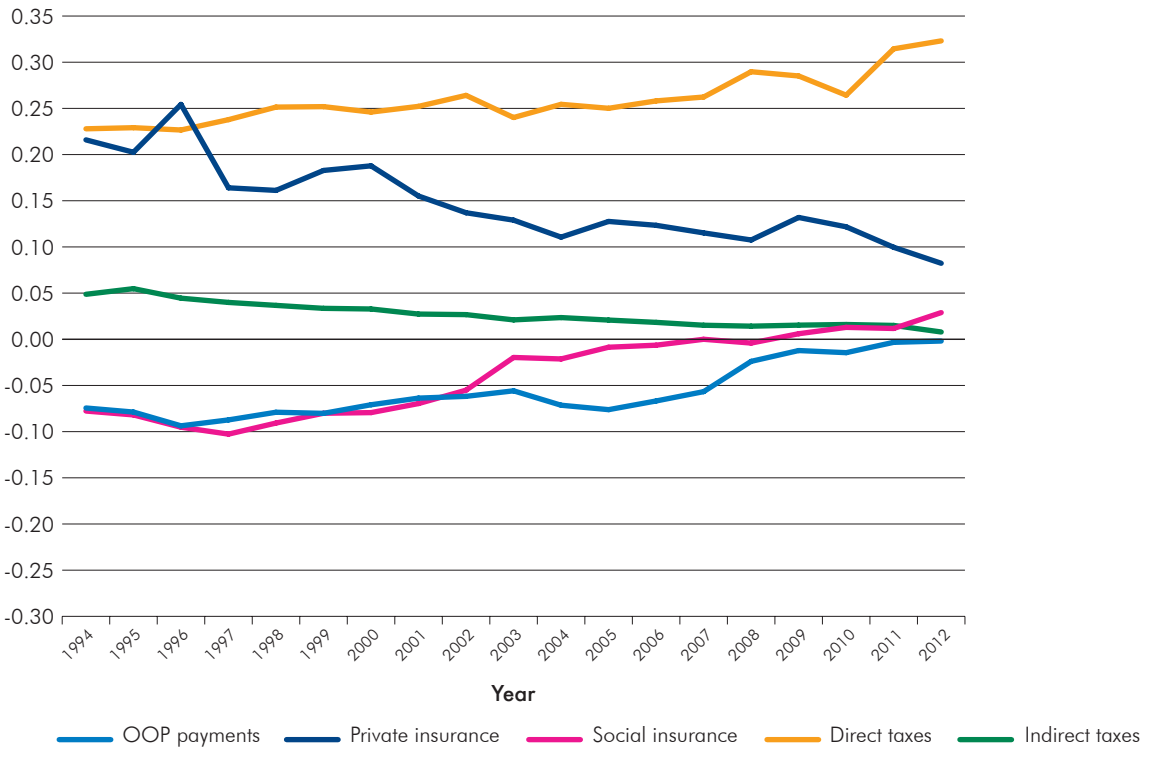
Notes: *Official national poverty line of $3459 (per year) based on 2007 prices.
Source: Directorate-General of Budget, Accounting and Statistics (2007)

Table 4: Incidence of different domestic financing mechanisms in Taiwan (2012)

Financing mechanism	Percentage share	Kakwani index
Direct taxes	3.56%	0.3231
Personal income taxes		
Corporate profit taxes		
Total direct taxes		
Indirect taxes	2.34%	0.0079
VAT		
Excise tax		
Import tax		
Total indirect taxes		
Other taxes		
Mandatory health insurance contributions	52.49%	0.0289
Total public financing sources		
Commercial voluntary health insurance	15.77%	0.0823
Out-of-pocket payments	25.84%	-0.0019*
Total private financing sources		
Total financing sources	**100%**	**0.0393**

Notes: • Estimates are based on per adult equivalent expenditures
• All Kakwani indices have reached statistical significance at p-value of 0.05, except for the one for out-of-pocket payments (denoted by*)
Source: Ministry of Health and Welfare (2012), The Life Insurance Association (2012), Council for Economic Planning and Development (2013), and author's calculations based on data from Directorate-General of Budget, Accounting and Statistics (2012)

Figure 3: Progressivity (Kakwani) indices for different financing sources in Taiwan (1994-2012)



Source: Ministry of Health and Welfare (2012), The Life Insurance Association (2012), Council for Economic Planning and Development (2013), and author's calculations based on data from Directorate-General of Budget, Accounting and Statistics (1994-2012)

Equitable use of health services and access to needed care

This section considers how benefits from using different types of health services are distributed across socio-economic groups. One measure of this is a concentration index, which shows the magnitude of socioeconomic-related inequality in the distribution of a variable. In Table 5, if the concentration index has a positive (or negative) value, the distribution of the use of the health service is considered to benefit the richest (or poorest) respectively.

As shown in Table 5, the poor consumed proportionately more visits to Western medical services in both the hospital and non-hospital setting in 2005. However, there was a pro-rich bias in the number of visits to dentists, while the visits to licensed traditional Chinese medical doctors were evenly distributed. In summary, for comprehensively covered services, such as inpatient and outpatient visits, a pro-poor pattern was observed.

Conclusion

NHI is one of the most highly rated social programmes in the history of Taiwan, with consistently more than 70% of the public expressing satisfaction with the programme (National Health Insurance Administration 2014).

Since its inception in 1995, NHI has greatly improved access to care and successfully provided financial protection to all citizens of Taiwan. It has delivered broadly satisfactory results in terms of the equity of both the financing and delivery of care. In general, NHI has been able to shield needy patients from financial barriers to access and provided access to comprehensive care. To a great extent the public has enjoyed freedom of choice and convenient access to services.

Despite its popularity, NHI has constantly been plagued by the threat of financial insolvency. The issue of financial sustainability is always top of the reform agenda and there have been numerous reform proposals.

Unfortunately, unwieldy political processes have prevented the Ministry of Health and Welfare from undertaking reforms to tackle the deficiencies of the system. In its 18-year history, the National Health Insurance Administration has only succeeded in raising the premium contribution rate three times, and this came at a high political price, with a Minister of Health having to step down at one point.

Without fundamental reforms to NHI's financing mechanism, such as linking premiums to better measures of total household income, the rapidly ageing population and economic stagnation are likely to threaten the financial soundness of the programme. For the foreseeable future, financial sustainability will remain a formidable challenge to the single-payer health insurance program in Taiwan.

Table 5: Concentration indexes for health service utilisation in Taiwan (2005)

Type of service	Inpatient visits	Outpatient visits#
Hospitals		
Western medicine	*-0.2621	*-0.1533
Traditional Chinese medicine	N/A	0.0250
Dental services	N/A	*0.1773
Total	*-0.2621	N/A
Non-hospital services		
Western Medicine	N/A	*-0.0828
Traditional Chinese Medicine	N/A	0.0696
Dental services	N/A	*0.1120
Total	N/A	-
Total	***-0.2621**	**N/A**

Notes: # Outpatient visits measured on an annual basis
* Confidence interval reached statistical significance at p-value of 0.05
Source: Health Promotion Administration, Ministry of Health and Welfare and National Health Research Institutes (2005) (which does not distinguish between public and private providers)

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GNHE is a partnership formed by three regional health equity networks – SHIELD (Strategies for Health Insurance for Equity in Less Developed Countries Network in Africa), EQUITAP (Equity in Asia-Pacific Health Systems Network in the Asia-Pacific, and LANET (Latin American Research Network on Financial Protection in the Americas). The three networks encompass more than 100 researchers working in at least 35 research institutions across the globe.

GNHE is coordinated by three institutions collaborating in this project, namely: the Mexican Health Foundation (FUNSALUD); the Health Economics Unit of the University of Cape Town in South Africa; and the Institute for Health Policy based in Sri Lanka.

More information on GNHE, its partners and its work can be found at http://gnhe.org