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questions. The speakers had to continue answering questions during the reception after the seminars. The questions and comments really reflected the fact that actuaries in each city are wrestling with somewhat different issues.
This is natural considering that market conditions are unique in each country and that each country has suffered from the Asian financial crisis in varying degrees. In Tokyo, our presentation was taped so that it could be transcribed and distributed to the attendees as well as to those who did not attend. In Jakarta, we were asked to go back for a sequel on financial modeling.

Yes, we also followed the good old U.S. tradition of hosting a reception after the seminar. The receptions were an excellent opportunity for discussing ideas, for meeting people, for sampling local food and drink, and for exchanging business cards. I ran out of my 50 or so business cards part way through the visit to the third city.

The actuarial institutes in each city actively worked with the SOA on the logistics of these seminars, which was no small task. We had strong support from the leadership of each institute and a group of excellent coordinators: Hikaru Sugawara in Tokyo; Jung-Hui Huang in Taipei; Michael Ross in Hong Kong; and Kasir Iskandar in Jakarta. The local actuarial institutes committed substantial financial resources essential to making these seminars possible. Funding was also provided by a joint effort within the SOA (International Section, Financial Reporting Section, and International Practice Area).

The speakers witnessed the SOA Ambassadors program under the International Section at work and were the direct beneficiaries of this program. For example, Dominic Lee (the Ambassador in Hong Kong) and his better half went above and beyond in showing speakers a great time in Hong Kong over the weekend.

I am very proud to have been a part of this first series of SOA seminars abroad. I would like to take this opportunity to express my deep appreciation to the many people involved (it took me several months to finish writing thank-you letters). It was their belief in this cause that made these seminars a success. The model developed for this series of seminars will be expanded to elsewhere in the world: June 1998 in Buenos Aires; possibly December 1998 in the Carribbean; and spring 1999 in Eastern Europe.

Overall, it was a very successful journey, especially considering I only lost (and found) my luggage twice in all the stops I made.

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Reforming Taiwan's NHI with Managed Competition

by Chiu-Cheng Chang

ABSTRACT

NOTE: *This article evaluates the performance of Taiwan's NHI program against its objectives and offers a managed competition model to reform the program. The model is expected to improve efficiency, quality, and innovation in health care within the constraint of equitable access but may not contain costs. In such a case, I argue for letting the market determine the optimal level and allocation of health care spending. If government intervenes the market by putting an upper limit on health care expenditures, I argue for the exclusion of cost-ineffective care from the compulsory health insurance system. This creates a new concept of equity and a two-tier health care system.*

Taiwan's National Health Insurance (NHI) program was implemented in March 1995. It is a compulsory, single-payer health insurance scheme incorporating 13 pre-existing public health insurance plans in Taiwan. It covers more than 96% of the population and provides comprehensive health care services to its insureds. These include hospital and surgical inpatient care, outpatient care, dental care, preventive care, pharmaceuticals, traditional Chinese medicine, and so on.

The objectives of the NHI program were as follows:

- To provide equal access to health care for all Taiwanese citizens
- To ensure both quality and efficiency in delivering health care services
- To control health care cost so that the total expenditures fall within an acceptable range.

The source of NHI's revenue is payroll-related premiums contributed by employees, employers, and the government. The contribution rates vary among six categories of employment, with the insureds contributing the most in total, followed by the government and then closely by the employers. In addition, the insureds are required to co-pay for health care services provided. For ambulatory and inpatient care, user fees are also charged to the patients. Under NHI, the payment system is mainly on the fee-for-service basis, supplemented by case payment, payment for disposable medical devices and materials, and a long list of prescription drugs.

After more than two years' operation, Taiwan's NHI experience has gradually emerged. There are many discussions and debates over whether the NHI program is succeeding in achieving its goals and whether there should be

some reforms to restructure the program. The purpose of this

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article is to evaluate the NHI program and offer a managed competition model to reform it so as to achieve its objectives.

Evaluation of Taiwan's NHI Program

As of the end of May 1997, Taiwan's NHI has collected nearly $18 billion (U.S.) of premiums and paid close to $16.5 billion (U.S.) of health care expenditures. Thus, it appears self-sufficient on the cash basis. However, the program does show a few worrisome signs.

Although the health care expenditure is only 5.26% of GDP for 1995–1996, its growth rate accelerates at more than 13% while the growth rate for GDP is at 8%. Also, the annual growth rate of the total health care expenditure is at 11.2%, of which outpatient care expenditure grows at nearly 15%. Examining the expenditure components further, one finds that the outpatient care exceeds 54% of total NHI medical claims and the drug expenses surpass 25% of total medical expenditure. Moreover, both the health care utilization rate and health care cost per capita increase rapidly.

Perhaps far more important than the above statistics are the following:

- NHI's inability to deliver health care services efficiently due mainly to its resource allocation and fee-for-service payment system
- NHI's inability to assure quality of care in delivering health services
- NHI's failure in providing both the insureds and providers the freedom of choice of insurers
- Difficulty in accessing health services because of uneven distribution of providers
- Public dissatisfaction rates range from 25% to 60%, averaging around 40%.

The idea underlying the managed competition model to reform Taiwan's NHI program comes not only directly from the desire to solve the above problems but also from reform experience of many countries. Most of these countries' reforms started out with the removal of barriers to access to health services. They were then followed by the control of the subsequent rise in health care expenditures. Finally, these reforms aim at improving the efficiency and quality with which health services are produced and used. The managed competition model as proposed here is to solve the problems described and listed above but within the constraints of equitable access and control of total health care expenditures.

A Managed Competition Model

The managed competition model as proposed here envisions a competitive market in which the allocation and price setting are determined by the market with the government instituting a set of rules so as to achieve the nations's goal with respect to equity and an efficient functioning of the market. As mentioned above, Taiwan's NHI is a single-payer, compulsory health insurance scheme under which both the insureds and providers do not have the freedom of choice as to the insurer. The proposed system intends to introduce managed competition among insurers and/or health insurance plans as well as among health care providers.

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Many people confuse the term "managed care," which refers to the procurement of health care services by health plans and/or insurers, with "managed competition," which refers to the procurement of health insurance policies from competing insurers and/or health insurance plans. The central idea of managed competition is to force rival insurers/health plans to compete honestly and fairly for enrollees in the health insurance market. Fundamental to this process is accurate information that a health care consumer ought to have on each competing plan. These information requirements are both vast and vitally important.

We can thus characterize the proposed system as a compulsory health insurance for the whole population and managed competition among insurers/health plans as well as among health care providers. Just as in the existing NHI program, under the proposed managed-competition scheme the mandatory income-dependent contributions will be made by the insureds, employers, and the government to the Bureau of National Health Insurance (BNHI) via the tax-collecting authority. The insureds will receive their subsidies to help them buy their compulsory health insurance. The subsidies will be paid directly by BNHI to the qualified insurers/health plans chosen by the insureds.

The subsidy per insured is independent of the chosen health plan/ insurer and is equal to the expected per capita costs within the risk group to which the insured belongs, minus a fixed amount which is equal for all insureds. The deficit created by this deducted amount is met by a flat-rate premium to be paid by the insured directly to the health plan/insurer of his or her choice. The difference between the actual costs and the risk-adjusted payment will not be the same for all health plans/insurers and will be reflected in the flat-rate premium that the competing health plans/insurers will quote. This creates the incentive for health plans/ insurers to be efficient.

The health plans/insurers will function as an intermediary between the insureds and the health-care providers. To a great extent, health plans/insurers and providers will be free to negotiate the terms and conditions of contracts. Because Taiwan's National Health Insurance Act does not specify the scope of benefits in terms of institutions such as hospitals or nursing homes, but rather in terms of types of care, any health care supplier meeting certain quality standards should be allowed to provide these services. This will greatly increase the possibilities for substitution of care and thus the competition among providers. Health plans/insurers will be allowed to selectively contract with providers and to

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offer different insurance options as long as the insurance conditions provide the insureds coverage for all types of benefits specified in the law. Insureds are free to choose among different health plans/insurers, selecting the insurance policy they like the most. The premium paid will reflect the efficiency and cost-generating behavior of the contracted health-care providers.

Equity, Cost Containment, Efficiency, and Quality

Under the proposed system, competition can be expected to improve the efficiency, quality, innovation, and responsiveness to consumers' needs and preferences. However, a question naturally arises as to whether managed competition can improve all these in health care within the constraints of equitable access and control of total health care expenditure. The constraint of equitable access appears to be achieved in a managed competitive health care system as proposed here for Taiwan's NHI program. Under the compulsory health insurance scheme, each Taiwanese citizen has access to a comprehensive health insurance benefits package within a large pool of well-mixed risks.

On the other hand, managed competition may not be able to provide any guarantee for the achievement of cost containment because health care expenditures under the model may exceed a certain percentage of GDP. This is especially likely given that:

- Additional health care can contribute to one's health.
- Most people consider a good health status to be the most important thing in life.

This means that a managed competitive health care system may yield higher total costs. However, we should also point out that a managed competition system could be expected to yield more value for money and may also yield more efficiency.

If managed competition does yield higher total costs, the government could impose a global budget on total health care expenditures by putting an upper limit on the premium that each insured pays directly to the health plan/insurer. In this way, the government is intervening with price controls and controls on olume and capacity in health care, making managed competition unworkable. On the other hand, if government is willing to share the responsibility for cost containment, efficiency and quality of care with all parties concerned (insureds, health plans/insurers, providers), then it should let the market determine the optimal level and allocation of resources to be spent on health care. What the market determines should then be considered the choices and preferences of all health care consumers in the nation.

An argument for government to put an upper limit on some health care expenditures is government's objective to provide access to health care for every citizen. Access to care for sick and low-income people means cross- subsidies from the healthy and high-income people. Should government put a cap on public health care expenditures, an important question arises as to what types of health care should be provided by the compulsory health insurance scheme. Should everybody have guaranteed access to all care with any possible benefits, regardless of the costs? Clearly no country in the world can really afford this kind of access. In such a situation, we believe cost- ineffective care (that is care with very high costs but very low expected benefits) should be excluded from the compulsory health insurance system. Therefore, under the managed competition scheme as proposed here, health plans/insurers should be allowed to refuse to reimburse those costs arising from cost-ineffective care. In other words, only equal access to cost-effective care is guaranteed under the system. Certainly the insureds are free to buy an all-inclusive policy that unconditionally reimburses all health expenditures. If such a policy is available on the market, its premium can be expected to be very high.

This brings up another question. Will a two-tiered health care system, in which those who can pay will buy all-inclusive policies and those who cannot pay will not receive cost-ineffective care, emerge under the proposed managed competition scheme? Given the limitation of resources available for cross-subsidies, it appears that a two-tiered system is inevitable. Those who can pay will always find their way. As n example, in Britain, salaried physicians working in a hospital are allowed to treat private patients in their private practice for a private fee. Under the proposed system, many wealthy Taiwanese, when necessary, are expected to go abroad searching for the best treatment available in the world.

Conclusion

This article first reviewed Taiwan's NHI program and evaluated its performance after two years' operation against it objectives. In order to help the NHI program achieve its objectives more assuredly, I offer a managed competition model to reform Taiwan's NHI program. The model is expected to improve efficiency, quality and innovation in health care within the constraint of equitable access but may not be able to achieve cost containment. In such a case as managed competition yielding higher total health care costs, I argue for letting the market determine the optimal level and allocation of health care spending. However, if government's objective is to provide access to health care for all citizens, it will intervene in the market by putting an upper limit on health care expenditures to achieve the cross-subsidies to the sick and low-income people. In such a situation, I argue for the exclusion of cost-ineffective care from the compulsory health insurance system. This creates the new concept of equity, that is, equal access to cost-effective care, which in turn induces a two-tiered health care system, in which those who are able to pay have access to care excluded from the compulsory health care benefits package. Given the limitation of resources available for cross-subsidies to the sick and low-income people, a two-tiered health care system is inevitable anyway. Finally, the cost-effectiveness of care appears to be the desirable criterion on which society can decide to which types of care every citizen should have access.

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