

Brief Communication

Cost of hemodialysis after coverage by national health insurance in Japan: a sharing experience with Indonesian health reform system

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Abstrak

Sekitar 50 tahun lalu, Jepang membuat sistem asuransi kesehatan yang mencakup seluruh warga negara, dan memulai periode pertumbuhan ekonomi secara cepat, sama dengan di Indonesia saat ini. Walaupun peningkatan kondisi kesehatan berkontribusi terhadap perkembangan Jepang, biaya kesehatan menjadi beban yang serius di bidang ekonomi. Dalam laporan singkat ini, kami meninjau konsep pengeluaran perawatan kesehatan di Jepang, berfokus pada penyakit gagal ginjal stadium akhir, untuk memberikan saran pada reformasi kesehatan di Indonesia.

Abstract

About 50 years ago, Japan established a health insurance system covering the entire population, and started a period of rapid economic growth, similar to what is happening now in Indonesia. Although improvements in health conditions definitely contributed to the development of modern Japan, the costs of medical care became a serious burden on the economy. In this short report, we review the concept of medical care expenditure in Japan, focusing especially on end-stage renal disease, to provide suggestions to medical reform in Indonesia.

Keywords: health reform system, hemodialysis

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Indonesia is the world's fourth most populous nation with 240 million population. The population is dominated by young people in which 55% of its population being under the age of 30, and is expected to grow 22% between 2010 and 2040. With the growing population, Indonesia's medical care expenditure (MCE) is predicted to reach US\$60.6 billion by 2018, showing an increase of 14.9% over the 2012-2018 period.¹

Indonesia is now reforming its national health insurance system. Indonesia already has several insurance schemes covering around 60% of the population. These schemes include the poor and near-poor (*Jamkesmas*), public sector workers (*Askes*), private-sector employees (*Jamsostek*) and the military (*Taspen*). However, around 86 million low-income people still have no access to healthcare services. The Indonesian government is restructuring the present

system to provide universal health care for all citizens by January 1, 2014. The new health care system will combine existing public insurance schemes, and extend them to cover all Indonesians without health insurance.

End-stage renal disease (ESRD) is a life-threatening condition that requires some form of renal replacement therapy, such as hemodialysis (HD), peritoneal dialysis, or kidney transplantation. Because ESRD is caused by many morbidities, including diabetes mellitus, and hypertension, it is anticipated that the number of patients with ESRD in Indonesia will increase.^{2,3}

HD, the most commonly used renal replacement therapy, requires a huge budget in order to maintain the life of patients, and its cost is a serious burden on MCE in other countries. In Japan, the government-based health insurance system (GBHI) was established in 1962. HD was covered by the GBHI in 1967, and in

1968 only 215 patients were maintained on HD in the whole of Japan. Coverage of HD by the GBHI allowed patients with ESRD to undergo HD, and the number of patients receiving it grew with time, becoming 27,048 in 1978, 88,534 in 1988, 185,322 in 1998, 283,421 in 2008, and 304,592 in 2012 (Figure 1A).⁴

The GBHI, covering all citizens of Japan, continued to expand after its introduction, costing US\$18.0 billion in 1968, 64.8 billion in 1975, 160.2 billion in 1985, 269.6 billion in 1995, 331.2 billion in 2005, and 374.2 billion in 2010 (Figure 1B).⁵

Because all the costs of medical care are determined and changed by the Japanese government every two years, the cost of HD has frequently been changed. Grossly, between 1970-1990, HD cost about US\$ 5,000-6,000/person/month, and 4000/person/month thereafter.⁶ Because no data are available for expenditure specifically for HD between 1968 and the present, in Figure 1C, the costs have been calculated from the number of ESRD patients

maintained on HD, and the cost of HD. The cost of HD was calculated on the basis the minimum cost of US\$ 4000/person/month. For example, in 2010, there were 298,252 patients on HD, and thus cost was US\$ 14.3 billion/year.

As shown in these figures, expenditure for HD increased year by year after coverage of HD was included in the GBHI. The cost of HD increased faster in relation to Gross Domestic Product (GDP) and the national budget. Figure 2A and 2B shows the ratio of MCE to GDP and the national budget, respectively. Despite sustained governmental efforts to reduce the MCE, the ratio of MCE relative to both GDP and the national budget has been increasing. National growth is inevitably accompanied by much faster expansion of the MCE.

Furthermore, HD expense has grown faster than the MCE. Figure 3A,B, and C shows the ratio of expense for HD relative to GDP, the national budget, and the MCE, respectively. The increase in HD expense has

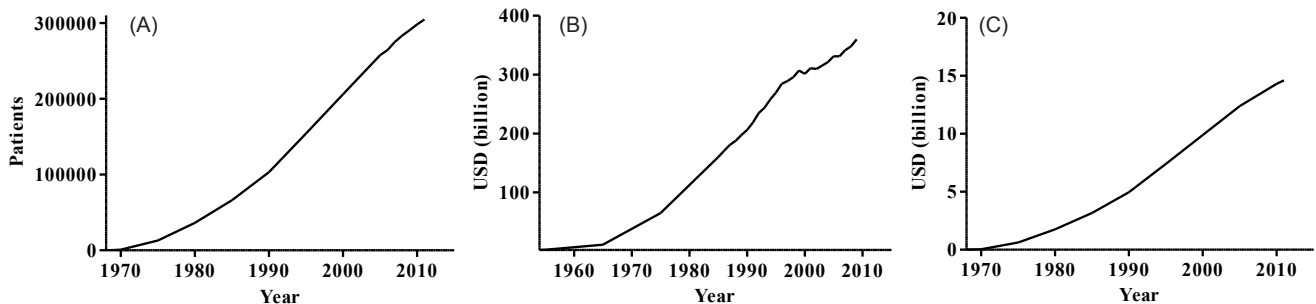


Figure 1. Changes in the number of patients with ESRD maintained on hemodialysis (A), changes of medical expenditure (B), and changes of the cost of hemodialysis (C)

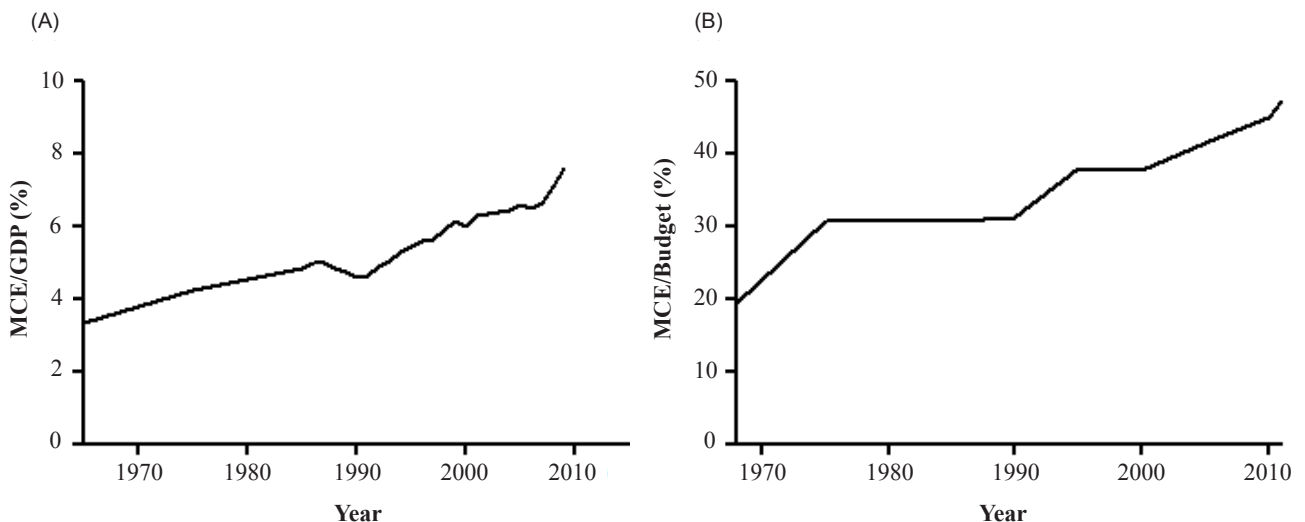


Figure 2. Changes in the cost of MCE relative to Gross Domestic Product (GDP) (A) and the national budget (B)

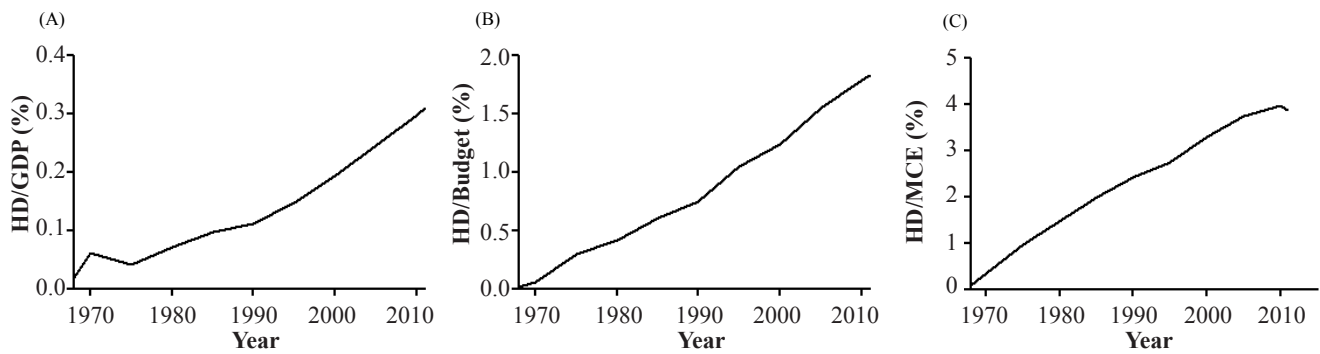


Figure 3. Changes in the cost of HD relative to GDP (A), the national budget (B), and medical care expenditure (MCE) (C). The cost of HD increased faster than that of GDP, the national budget, and MCE

been faster than that of national growth and even faster than that of the MCE.

Japan experienced a period of rapid growth in 1960-1990, and this period also showed a rapid increase of patients with ESRD and requiring HD. HD needs financial support from the health care system because of its nature. Patients need to undergo HD for 4-5 hours, 2-3 times a week, regularly. This has led to an increased number of ESRD patients requiring HD, placing a serious burden on MCE in Japan.

Current medical care reform in Indonesia will definitely contribute to improving the health condition of Indonesian citizens, and will strengthen its integrity as a nation-state. HD should definitely be covered by the future insurance system in Indonesia. To achieve this ultimate purpose, Indonesians should learn from the Japanese experience. Strategies for maximizing the benefits of GBHI and for minimizing the cost for HD is mandatory.

Conflict of interest

The authors hereby affirm that there is no conflict of interest in this study.

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