Further Implementation of Telemedicine  
from the Perspective of e-Health Economics

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Abstract—This paper aims to identify obstacles that hinder the further diffusion of telemedicine in Japan from the aspects of legal and economic foundations. Although Japan has well-developed information technology, the level of telemedicine diffusion is not necessarily internationally high. Economic effect of telecare is demonstrated as an evidence for reimbursement of telecare from medical insurance.

I. INTRODUCTION

Most of the countries have been suffering from medical issues including increase in medical expenditures due to the aging society and change in lifestyle, financial problems of the public medical insurance system, and discrepancy of medical resources in regions. There is no room for doubt that the most possible means to solve these issues is applications of IT (Information Technology) in medicine, namely telemedicine, e-Health, m-Health, and u-Health. IT promotes efficiency in the provision of medical services by sharing patient’s information using EHR or PHR, saving travel costs of doctors and patients, increasing QoL of patients and family. IT also improving health and preventing diseases by tele-monitoring and telecare. Although telemedicine has the above merits, the level of its diffusion still remains the experimental stages in the most of countries. The obstacles against telemedicine can be summarized as (1) legal regulations such as face-to-face diagnosis and creditability; (2) privacy of health data; and (3) evidence of safety and effectiveness.

II. OBSTACLES OF TELEMEDICINE IN JAPAN

The administrative rulings on diagnosis using ICT in 1997 and 2003 listed seven diseases as samples and it satisfies the same condition as face-to-face diagnosis. These rulings did not mention concrete conditions; telemedicine was not believed to be widely admitted as legal. Other countries have no general legislation to prohibit telemedicine, except the safety of system and equipment. In March 2011, a new administrative ruling was issued which finally admits telemedicine under a condition of the same level safety as conventional medicine and there seems to be no legal regulation in principle, but no concrete creditability is not decided yet such as who can engaged in telemedicine, doctors, nurses, N.P. or co-medical.

Regarding the financial foundation of telemedicine, the current situation is worse. The reimbursement of consultation fees by telephone is admitted for telemedicine patients but its amount is 690 yen (about US$9.00). This does not provide an enough economic incentive. The Ministry is still reluctant to expand telemedicine reimbursements. US Medicare is analyzed intensively in terms of its perspectives, framework, treatment and diseases reimbursed, and amounts. Medicare could be a good model for Japan.

III. EVIDENCES HOW TELEMEDICINE EFFECTS TO HEALTH

Based on actual telemedicine experiences, this paper envisions what are required for further enhancing Japanese telemedicine. This presentation introduces various implementations using smart technology including m-health such as a wireless blood pressure monitoring system and e-Health such as a telecare system of the elderly at home. The both systems are aimed at monitoring the health of the elderly at home via the transmission of health-related data, and are thereby expected to enhance users’ health ([1], [2]). This paper aims to examine the long-term effect of telecare (e-Health) on medical expenditures and treatment days in a project of Nishi-aizu Town, Fukushima Prefecture, Japan from 2002-2010, which has been implementing the project to maintain the health of the elderly or patients at home. The method of analysis is to compare the above outcomes of two groups, namely users (treatment) and non-users (control) of the system based on the receipt data issued by National Health Insurance using rigorous statistical analysis. Our previous papers used five-year data from 2002 to 2006 ([1], [2]), and this paper expands the period of analysis to four more years. The samples in this analysis are the same as those in the previous analysis, but the number of samples used here is reduced, namely 90 of users and 118 of non-users ([3]).

In addition, this paper attempts to identify how telecare reduces medical expenditures in the long-run and which chronic diseases reduced medical expenditures or treatment days largely by telecare use.

REFERENCES


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