

Return on Investment of National Standardized Health Training in Japan – a Cohort Study Using “Wellness-Star[☆]” Health Insurance Claims Database

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OBJECTIVES

- Since 2008, Standardized Health Training (SHT) has been offered to members of Japan's national health insurance system along with Standardized Health Check-ups (SHC). SHT helps people at risk for metabolic syndrome prevent lifestyle-related diseases through behavioral changes.
- The content of SHT is either motivational support (MS) or proactive support (PS), depending on the risk level. MS is designed to help people reflect on their lifestyle and set goals. In addition to MS, PS is provided by public health nurses continuously.
- SHT is paid for by health insurers. Therefore, it is of great interest to insurers whether the costs they pay for SHT contribute to the amount of health care cost savings, improved quality of life for employees and their families, and increased employee productivity.
- In this study, we estimated the Return on Investment (ROI) of SHT using Real World Data and by limiting the return to the health care cost savings.

METHODS

- We used the “Wellness-Star[☆]” database, which includes information on SHT, SHC, and medical costs, provided by Nippon Life Insurance Co.. The sources are health insurance societies, health insurers established by large corporations exclusively for their employees and their dependents.
- Among people with a one-year baseline period before the index date, the date of SHC, and a four-year observation period, the intervention group was defined as those having SHT associated with the index date, and the control group was as those not having SHT and matched to a person in the intervention group in index date, observation end period, age (5-year-old group), sex, metabolic judgement, health training level, and baseline medical expenses.
- The metabolic judgment is a judgment to evaluate whether or not a person has metabolic syndrome determined by abdominal circumference, blood pressure, blood glucose level, and lipids. The patient is classified into one of the following three categories: Standard, Preliminary group, or Other.
- The health training level is an indicator of the necessity of health training according to lifestyle and health status, based on the results of SHC. There are three levels: Proactive Support Level, Motivational Support Level, and Information Provision Level. The actual PS/MS may differ from the health training level. The health training level is also granted to those who do not take SHT.
- The baseline medical expense PMPM was classified into 41 classes according to the integer portion of the logarithm (base 10) of the PMPM (in JPY).
- Matching was done on a many-to-many basis. Weights were developed to ensure that the intervention and control groups had the same weighted numbers of participants.
- Returns were defined as the difference in medical cost between intervention and control groups over the four-year period.
- The return divided by the investment, the SHT costs, was ROI. The SHT costs were quoted from the web site of Japan Health Insurance Association (Kyokai Kenpo), assuming minimal difference in SHT costs in Japan.

RESULTS

- “Wellness-Star[☆]” database includes 4.9 million insureds.
- The number of insureds in the intervention and control groups were 9,214 and 34,924, respectively.
- The trends of the cost per member per month (PMPM) by months from index are in Chart 1. PMPM over the four-year period (month 0 to 48, the follow-up period) for the intervention and control groups were 10,295 and 11,466 JPY respectively for PS, and 9,553 and 10,661 JPY respectively for MS.
- As a result, cost savings PMPM by PS/MS are 1,171 and 1,107 JPY respectively. They are 7.32 and 6.92 EUR (1 EUR=160 JPY).

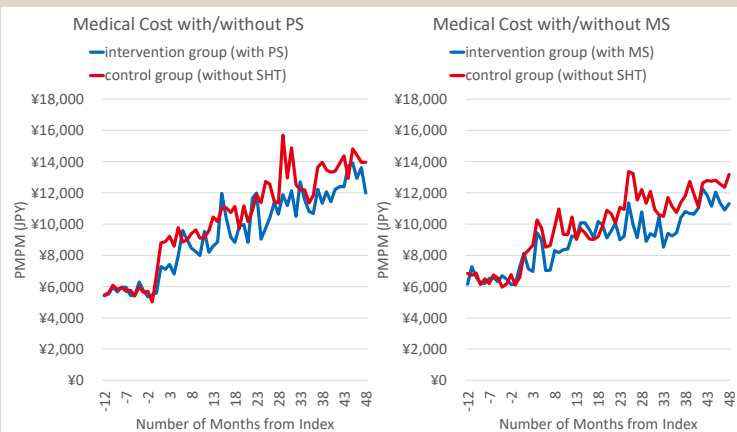


Chart 1: Medical Cost by Months from Index of Intervention/Control groups

The intervention group is divided into PS and MS groups. Each of PS and MS groups has a control group. Because of the baseline medical costs were matched, the PMPM before index were similar in both intervention and control groups.

PS: proactive support, MS: motivational support, PMPM: Per Member Per Month

- The intervention costs of PS and MS were assumed as 25,120 and 8,420 JPY respectively. They are 157.00 and 52.94 EUR.
- The people in the intervention group of PS or MS had 1.65 or 1.61 trainings on average in the FU period.
- According to Table1, the ROI of PS and MS were estimated 1.36 and 3.90, respectively.

	PS	MS
Number of Trainings Per Person in FU Period	1.65	1.61
Cost per Training	¥25,120	¥8,420
Investment	¥41,391	¥13,622
Cost Savings in PMPM over FU Period	¥1,171	¥1,107
Return	¥56,208	¥53,136
ROI	1.36	3.90

Table 1: ROI of PS/MS

The Investment was calculated as cost per training multiplied by the number of training per person in the follow-up period (i.e. 4 years). The return was calculated as cost savings in PMPM multiplied by 48.

PS: proactive support, MS: motivational support, PMPM: Per Member Per Month, FU: follow-up, ROI: return on investment

CONCLUSIONS

- ROI of SHT was estimated to be more than 1.