

# Costing Method in Health Care

## Introduction

The cost analysis has been used in various ways in the health care. First, the study of cost-of-illness has been used to determine the priority of the policy or to verify the legitimacy of prevention or treatment program by providing the economic burden for certain diseases or health behaviors. The economic evaluation in Korea has been also actively performed because the cost-effectiveness has to be also considered together when assessing whether National Health Insurance(NHI) of Korea covers the new drug according to the introduction of the Positive List System for drug in Dec 2006. However, the comparability of the cost of illness or the economic evaluation that has been performed in Korea was not high because the costing method was different for each research. In view of the importance of the studies which are utilized in policy priority setting, these differences can be the barriers to be used. This manual was developed to reach a consensus on the standard costing method under this background.

## Objective

This manual presents a reasonable costing method in order to increase the comparability of the cost of illness or the economic evaluation results to be used in priority setting of policy in health care. In addition, the detailed costing method was provided so that researchers can use in practice.

## Results

In this manual, the cost items were divided into the medical costs, non-medical costs and the productivity loss costs. The medical cost is the costs consumed to use the services of medical institutions(formal medical costs) and the informal spending costs such as health supplement and medical equipment purchase. In non-medical costs, the transportation costs, the caregiver cost, and the time cost of patient were included. The productivity loss costs mean the costs of economic loss that are caused by not be able to participate in the labor market due to the diseases itself or the premature death caused by the disease(Table 1).

In addition, the detailed cost items to be considered from the point of each perspective were presented, classifying the analysis perspective that can be taken in the economic evaluation or the cost of illness, into the insurer perspective, the health care system perspective and the societal perspective(Table 2).

In each chapter, 1) definition, 2) calculation method, 3) data sources and 4) major issue about the cost of each item – the formal medical costs, informal medical costs, transportation costs, time costs and caregiver costs - were described, and the costs of illness of glaucoma was presented as an example in order to help the reader's understanding about the costing method presented in the manual. The last chapter describes the methods and data sources to adjust the time preference by each cost item. In addition, the Excel template was provided through the website of NECA so that the researchers can easily calculate the costs.

<Table 1> Definition for Cost item

Cost item		Definition
Medical costs	Formal medical costs	The Formal medical costs are the cost being spent while receiving the medical service for the purpose of prevention, treatment and rehabilitation of the relevant disease in medical institutions. Here, the medical care institution includes all institutions of both western medicine and oriental medicine, and also the cost by the legitimate medical practice made outside of medical institutions, such as home nursing is included.
	Informal medical costs	The informal medical costs include the cost that the individual patient expenses to purchase OTC (over-the-counter) drug, health supplements, medical equipment and assisting devices for the purpose of the prevention, treatment and rehabilitation of diseases.
Non-medical costs	Transportation costs	The transportation cost mean all costs incurred when the patient use the transportation to visit the medical care institution in the process treating the disease. The transportation cost is the paid cost for transportation to get outpatient or inpatient care.
	Time costs	The time costs mean the loss of time that occurs when the patient utilize medical institutions or pharmacies in order to treat the disease. The time costs include time receiving medical care, as well as the time of round-trip transportation to medical institutions, and the time that waiting the medical care.
	Caregiver costs	The caregiver costs are the cost that paid to hire the caregivers or the cost of time or wage loss that the family and relatives spent for the care of the patient. The caregiver costs mean the cost of paid caregivers or the loss of time that is spent due to the informal care when use the medical care for the patient's disease morbidity and treatment.
Productivity loss costs	Morbidity costs & Premature death costs	The productivity loss costs are defined as the cost associated with that the ability to work is damaged or lost due to the patients' own disease morbidity, or that the economic productivity is lost due to the premature death caused by illness. 'The damage or lose of the labor ability' include the case that was absent due to illness (absenteeism), and the case that can not work (presenteeism) in the level of productivity before illness due to illness. Also, if a patient quits the paid work due to relevant illness, the loss caused by illness of the wage that can be generated in the future, can be included in the cost of productivity loss as the cost of employment loss.

<Table 2> Analysis Perspective and Expense Items Classified

	Insurer Perspective	Health care system perspective	Societal perspective
Cost items	<b>[Medical Costs]</b> <b>- Formal medical costs</b> Benefit by NHI Out-of-pocket payment for covered services (Out-of-pocket payment for non-covered services) <sup>1)</sup>	<b>[Medical Costs]</b> <b>- Formal medical costs</b> Benefit by NHI Out-of-pocket payment for covered services (Out-of-pocket payment for non-covered services) <sup>1)</sup> <b>- Informal medical costs</b>  <b>[Non-medical Costs]</b> <b>- Transportation costs</b> <b>- Patients' time costs<sup>2)</sup></b> <b>- Costs of long-term care service</b> <b>- Caregiver costs</b>	<b>[Medical Costs]</b> <b>- Formal medical costs</b> Benefit by NHI Out-of-pocket payment for covered services (Out-of-pocket payment for non-covered services) <sup>1)</sup> <b>- Informal medical costs</b>  <b>[Non-medical Costs]</b> <b>- Transportation costs</b> <b>- Patients' time costs<sup>2)</sup></b> <b>- Costs of long-term care service</b> <b>- Caregiver costs</b>  <b>[Productivity loss costs]</b> <b>- Morbidity costs</b> <b>- Premature death costs</b>

Note: 1) If necessary, suggest

2) In the studies of costs-of-illness, when performing in the societal perspective, in general, the patients' time cost is included in the morbidity costs.