Chapter 20
A New Cost Accounting Model and New Indicators for Hospital Management Based on Personnel Cost

Yoshiaki Nakagawa
Kyoto University, Japan

Hiroyuki Yoshihara
Kyoto University, Japan

Yoshinobu Nakagawa
Kagawa National Children's Hospital, Japan

ABSTRACT

Specified hospital accounting systems in a hospital are necessary for a manager to determine the proper management strategy. We developed a new cost accounting model based on new allocation rules of personnel cost. The model presented in this chapter offers a manager useful tools to calculate the medical cost not only for an individual patient and for each clinical department, but also each DRG system for a specific period.

New financial indicators were developed based on personnel costs which were calculated using this new cost accounting system. Indicator 1: The ratio of the marginal profit after personnel cost per personnel cost (RMP). Indicator 2: The ratio of investment (=indirect cost) per personnel cost (RIP). Operation profit per one dollar of personnel cost (OPP) was demonstrated to be the difference between the RMP and RIP. The break-even point (BEP) and break-even ratio (BER) could be determined by combining the indicators. RMP demonstrates not only the medical efficiency, but also the medical productivity in the case of DPC/DRG groups. OPP can be utilized to compare the medical efficiency of each department in either one hospital or multiple hospitals. It also makes it possible to evaluate the management efficiency of multiple hospitals.

INTRODUCTION

In order to make suitable management decisions, the hospital manager must analyze the medical revenue and cost of not only the entire hospital, but also individual patient and clinical departments (Cleverley, 2002; Schuhmann, 2008). Even if the medical revenue of a department is apparently high, it is not unusual for the financial balance of the department to be in the red (Nakagawa, 2009). However, it is not easy to recognize the medical efficiency of each department because an adequate and simple medical cost analysis method has not been developed that can determine the financial balance for each patient (as a minimum unit) and/or department. Therefore, it is difficult to compare the efficiency of individual departments in a particular hospital and compare them to the rest of the hospitals in the region. Despite the existence of many kinds of benchmarks or indicators, most of them are not related to efficiency from a medical management point of view (Balicki, 1995; Melony, 1995). The major problem blocking the development of a successful model is how to allocate the indirect costs (depreciation and maintenance cost for a hospital) for each patient and clinical department. The other problem is the allocation rule of personnel cost, which consumes more than 50% of a typical hospital's revenue.

The aim of this chapter is to demonstrate a new allocation rule of personnel cost in a hospital and cost accounting model. The indirect cost is allocated according to the personnel cost computed by the new allocation rule. The new indicators for hospital management based on the personnel cost computed by the new cost accounting model are also presented. These indicators are new tools that can be used as benchmarks or indicators for evaluating the management efficiency and medical productivity of a hospital, as well as of each individual department and DRG (DPC) system.

BACKGROUND

To remain solvent, it is necessary to streamline hospital administration, and it is essential to conduct evaluations at the clinical-department or division level (which can be referred to as evaluations for each sales department) in order to identify areas needing changes. Unfortunately, there are currently no simple and standard evaluation methods that can be used for this purpose (Makie, 2002; Tanaka, 2004). The average length of stay (ALOS) or cost per patient etc. are good benchmarks for a hospital manager to compare his hospital to another hospital, or to compare individual clinical departments within the same hospital. However, there are few indicators that can be used to determine the relationship between the investment and medical productivity or management efficiency of a hospital.

As a cost accounting method, the ratio-cost-to-charge (RCC) method and the relative value unit (RVU) method have been widely used (West, 1996). However, the methods were developed primarily in industry and imported into the medical field. The costs in industry are usually divided into two categories; fixed costs and variable costs. The fixed costs, which include the personnel cost, depreciation cost and maintenance cost, were allocated in accordance with machine time and occupancy space. This provides an accurate estimate of efficiency because most of the products are made by a simple production line or process in industry. However, a patient treated in a hospital receives various medical services from different medical sections. One of the major problems preventing the use of these industry-derived methods is how to allocate the depreciation cost and maintenance cost of a hospital to an individual patient (Nakagawa, 2007).

If we calculate the cost of the medical services that each patient receives as a product generated in a factory, we have to consider a large number

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