Critical Care Nurse Specialists’ Fee Development in South Korea

JinHyun Kim¹, KyungSook Kim², CheongSuk Yoo³, and KyoungA Lee⁴

¹ Professor, College of Nursing, Seoul National University, jinhyun@snu.ac.kr
² Assistant Professor, Department of Nursing, Namseoul University, kgs4321@hanmail.net
³ Director, Seoul National University Hospital, csy@snuh.org
⁴ Corresponding Author. Doctoral Degree Student, College of Nursing, Seoul National University, tj720221@snu.ac.kr

Abstract. This study aimed to develop a nursing fee for advanced nursing practices done by critical care nurse specialists (CCNSs). The nursing fee for the 20 advanced nursing practices was calculated by multiplying the resource based relative value scale (RBRVS) of the each practice and the conversion factor. Most practices of CCNSs belonged to the category of less than 10,000 KRW. In order to improve efficient utilization of medical manpower in intensive care units, the employment of nurse specialists in hospitals is thought to have the national benefits.

Keywords: Critical care nurse specialists, Advanced nursing practice, Fee, Resource based relative value scale

1 Introduction

In 1960s, the nurse specialist system of America was suggested as an alternative substitute for the lack doctors, and currently, the role of advanced nurse practitioner has been expanded because of a reduction in the working hours of junior doctors and a shortage of medical manpower [1]. Nursing associations and groups in the USA have developed the advanced nurse practitioner system through systematic activities, and they have developed nursing care standards and curriculums for an advanced nursing level [2]. As the environment of the health and medical treatment in Korea changed, the advanced nurse specialist system was introduced to Korea, and critical care nurses have come under the program for this system. Intensive Care Units (ICUs) have a key role in the most severe sick patients who are hospitalized with various health problems. The quality of nursing service is influenced by nurses’ skill and knowledge. Therefore, the role of critical care nurses is becoming more important in ICUs [3].

Health Quality Ontario(2013) noted that nurses with additional skills, training, or scope of practice may help to improve the primary care of patients with chronic disease [4]. And Sidani et al (2007) reported that practitioner intervention showed more increased patient satisfaction [5].
Although CCNPs have provided more advanced nursing practices since the 1990s, the activities of CCNPs are very restricted; invasive care nursing practices are not allowed. However, Korea’s CCNSs have been provided a high level of nursing practices such as ventilator care, decision making on nursing in ICU settings, etc. Few studies have shown the outcomes of CCNSs or done an economic analysis of South Korea’s healthcare system in terms of CCNS. Therefore, the purpose of this study was to perform fee development for the advanced nursing practices of CCNSs using the resource based relative value scale (RBRVS) and a conversion factor.

### 2 Research Method

Based on the 20 advanced nursing practices of CCNSs classified by Kim et al. (2014) [6], the fees were calculated using the resource based relative value scale (RBRVS) and a conversion factor.

The RBRVS of each advanced nursing practice was calculated using the result of Kim et al. (2014). Using the average relative value scale and nursing time measured in a previous study, corrected RBRVS for the 20 practices was calculated comparing the standard nursing practice.

To estimate the conversion factor, the average of direct personnel expenses and indirect costs of CCNSs, the rate of time required to perform the 20 advanced nursing practices among total working time of a CCNS and the annual frequency for each of the 20 practices were investigated.

### 3 Results

Calculation of the corrected RBRVS for the 20 advanced nursing practices had a range of points from 5.2 to 367.3 with an average of 90.7 points. The relevant conversion factor for the advanced nursing practices of CCNSs was estimated at 24.3~33.9 KRW at 0%, 10%, 20%, and 30% of the indirect cost rate.

Most advanced nursing practices belonged to the category of less than 10,000 KRW except for “Maintenance and management of CRRT”. The fees for nursing practices associated with assessments such as neurological system-cranial exam, delirium, and respiratory system had lower fees than those of the other practices.

#### Table 1. Fee by resource based relative value scale for CCNSs

<table>
<thead>
<tr>
<th>Advanced nursing practices</th>
<th>National Health Insurance(NHI)</th>
<th>NHI Fee (RBRVS)</th>
<th>Rate of indirect cost in total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ventilator care</td>
<td>Artificial ventilation:within 3hours</td>
<td>73,815 (860.32)</td>
<td>3,159.0 3,471.0 3,786.0 4,407.0</td>
</tr>
<tr>
<td>Assessment of neurological system-cranial nerve examination</td>
<td>Involved Inpatient care fee</td>
<td>941.5</td>
<td>1,034.5 1,131.4 1,313.5</td>
</tr>
<tr>
<td>Assessment of delirium</td>
<td>Involved Inpatient care fee</td>
<td>770.8</td>
<td>846.9 926.2 1,075.3</td>
</tr>
</tbody>
</table>
Assessment of respiratory involved Inpatient care fee
Application and decision making for oxygen therapy in ICU patients
Chest physiotherapy-high frequency chest wall oscillator
Decision making and application of aerosol therapy
Inhaled NO therapy
Recruitment maneuver
Start of NIV (noninvasive ventilation)
Management of home ventilator assisted patients
Management of mechanical ventilator weaning
Artificial airway management-maintenance
Extubation
Start of patients with ECMO
Management of patients with IABP
Start of CRRT
Maintenance and management of CRRT
Nursing care for chest tube removal
Mean

### Discussion

Our study calculated the fees for 20 advanced practices of CCNSs using the relative value scale. As a result, the classification and scope of the practices are different from that of the National Health Insurance. Moreover, direct comparisons are difficult; for the start of CRRT, it is calculated by performance on one day when the catheter is inserted, but our study calculated it using only the practice of starting CRRT. Moreover, NHI fees are calculated by including related practices, but our research estimated the fee by separating the practice; therefore, the fees do not simply just match each other.

One of the major issues in the current health care insurance system is that it
involves high cost of health expenditure. And numerous studies consistently shown that advanced nurse practitioner provide high quality, safe, effective, and affordable health care [7][8]. Accordingly, taking advantage of the advanced nurse practitioners can be one of the alternatives.

However, the practices of CCNSs are not compensated for separately in Korea, and their reimbursement is usually included in the physician fees or intensive care unit patient fees. Therefore, Korea’s nurses must prove the economic benefits of advanced nursing practices to the public health system in order to receive compensation from the National Health Insurance. CCNSs would be make significant contributions toward health improvements of patients in intensive care units.

Acknowledgements. This study was supported by a National Research Foundation of Korea (NRF) grant funded by the Korea government (NRF-2011-0024586).

References