

## Factors Influencing Length of Stay in Adult Intensive Care Units at a University Hospital in Thailand

Petsunee Thungjaroenkul<sup>1\*</sup>, Wipada Kunaviktikul<sup>2</sup>,  
Thitinut Akkadechanunt<sup>2</sup> and Philip Jacobs<sup>3</sup>

<sup>1</sup>Ph.D. candidate, Faculty of Nursing, Chiang Mai University, Chiang Mai 50200, Thailand

<sup>2</sup>Faculty of Nursing, Chiang Mai University, Chiang Mai, 50200, Thailand

<sup>3</sup>University of Alberta, Alberta, T5J3N4, Canada

\*Corresponding author. E-mail: [petsunee@mail.nurse.cmu.ac.th](mailto:petsunee@mail.nurse.cmu.ac.th)

### ABSTRACT

*The problem of prolonged-stay in an Intensive Care Unit (ICU) may be due to patients' conditions and inefficient care management. To solve this problem requires empirical information on factors affecting ICU Length of Stay (LOS). The purposes of this study are to assess LOS in four ICUs at a university hospital in Thailand and factors influencing length of ICU stay. In this descriptive correlational study, data were obtained from a total of 242 patient records, assignment sheets and daily nurses' reports. The following data were recorded: patient age, diagnosis, ICU type, severity of illness, serum albumin level, lymphocyte count, day and time of patient admission, duration of mechanical ventilation, LOS, discharge status, the average ratio of registered nurse (RN)-to-patient and the average ratio of RN-to-other nursing staff. Findings showed a mean ICU LOS of 5.2 days. The predictors for ICU LOS were severity of illness, serum albumin level, lymphocyte count, ICU type, day and time of patient admission and the average ratio of RN-to-patient ( $R^2_{adj} = 0.29$ ,  $p < 0.001$ ). The study provides information for health personnel to facilitate care management decisions for prolonged-stay patients.*

**Key words:** Length of stay, Intensive care, Severity of illness, Nurse staffing

### INTRODUCTION

ICUs are highly-specialized hospital areas where critically-ill patients are monitored and treated by skilled personnel and complex equipment, resulting in higher expenditures per patient day than other areas in the hospital (Bonvissuto, 1994). Due to ICUs being the most costly place to care for patients, a typical critically-ill patient should require only a short length of stay (LOS) in a unit during the most acute phase of illness (Daly et al., 1991). However, a study showed that 3% of the total number of ICU patients had durations of intensive care greater than 21 days and accounted for approximately 25% to 38% of patient days (Daly et al., 1991). An additional study in a university hospital in Thailand revealed that LOS