

IDENTIFYING RELATIONSHIP BETWEEN
PATIENT ACUITY INDICATORS
AND NURSE WORKLOAD

Bayram Dunder

Dr. Mustafa Y. Sir, Thesis Supervisor

ABSTRACT

Patient classification systems are commonly used in nursing units to assess how many nursing care hours are needed to care for patients. In current practice, these systems utilize several patient acuity indicators to produce a single number for given patient, which is called the acuity score. These systems then provide staffing recommendations for a given patient census based on these acuity scores. Our new approach offers a mathematical model which uses patient acuity indicators data from a commercial patient classification system called AcuityPlus and a nurse workload survey from two nursing units at the University of Missouri Hospital. The model distributes workload calculated as a function of patient acuity indicators and nurses' perceived workload among nurses in a balanced way. More specifically, we consider nurses' preferences by conducting a survey in order to determine how much the workload of a nurse increase for each indicator. The purpose of this study is to conduct a comprehensive analysis of patient acuity indicators as a mean of balancing workload of nurses, and suggest nurse staffing and assignment models to aid decision-making. Our numerical results suggest that the proposed nurse-patient assignment models achieve a more balanced assignment of workload among nurses compared to assignment based on acuity scores from the commercial patient classification system.