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Modeling the Effect of Short Stay Units on Patient Admissions

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Abstract

Two purposes of Short Stay Units (SSU) are the reduction of Emergency Department crowding and increased urgent patient admissions. At an SSU urgent patients are temporarily held until they either can go home or transferred to an inpatient ward. In this paper we present an overflow model to evaluate the effect of employing a SSU on elective and urgent patient admissions.

Keywords: Capacity Planning; Emergency Department; Length of Stay; Patient Admissions; Queuing Theory; Short Stay Unit

1. Introduction

Emergency Department (ED) crowding is an increasing problem, resulting in an increased length of stay and prolonged waiting times for patients. Also, ED crowding may result in increased mortality rates and lower quality of care [1]. These problems are not only caused by an aging population [2], a higher demand for acute care [3], and the inability to transfer patients to inpatient beds [3, 4], but also by hospital restructuring leading to fewer inpatient beds and more ambulatory care [5].

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