

# In-Hospital Charges Associated With the Treatment of Adult Femoral Neck Fractures

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## ABSTRACT

A retrospective analysis of 41 adult patients treated for a femoral neck fracture was performed to determine the variables that best predict total hospital charges. The patients were treated for an isolated femoral neck fracture at our hospital from January 1993 through December 1994. There were 13 men and 28 women. The average age at the time of injury was 63 years. The average length of stay was 12.1 days, and the average total hospital charges per patient were \$16,072. No physician fees were included in our analysis. Detailed multivariate regression analysis of 10 variables was performed for each patient. Stepwise linear regression analysis, which controlled for all variables (such as age at injury, number of medical illnesses, gender, and others), revealed that the strongest predictors of total hospital charges were the number of medical illnesses ( $P < 0.0001$ ), age at injury ( $P = 0.023$ ), length of stay ( $P < 0.0001$ ), and number of complications ( $P = 0.0007$ ).

Adult femoral neck fractures cost society approximately \$8 billion annually.<sup>1-4</sup> In addition to the fracture itself, this injury is associated with significant morbidity and mortality. There are an estimated 250,000 new cases of femoral neck fracture in the United States each year.<sup>1,2</sup> This figure is expected to rise dramatically as the number of elderly increases and the incidence of hip fractures rises exponentially with age.<sup>3,4</sup>

The optimal method of treatment for a femoral neck fracture is controversial in some cases, and the fracture has been commonly referred to as the "unsolved fracture."<sup>5</sup> Some authors have reported good results with nonoperative treatment of impacted (Garden 1) fractures.<sup>6</sup> Today, the generally accepted choice of treatment for a femoral

neck fracture is either internal fixation or arthroplasty.<sup>7-10</sup> The important factors to consider when selecting a treatment plan include age, fracture pattern and displacement, bone quality, overall medical status, injury severity, activity demands, and, recently, cost of treatment. Standard prospective reimbursement schemes, including diagnosis-related groups, figure to play an increasingly important role in the current climate of cost-containment strategies.<sup>2</sup>

We retrospectively reviewed the medical and financial records of 41 patients with femoral neck fractures treated at our community hospital in order to determine which variables best predict total hospital charges.

## PATIENTS AND METHODS

The subjects were 41 patients from a group of 72 consecutive patients treated at Lyndon B. Johnson General Hospital, Houston Texas, for a femoral neck fracture from January 1993 through December 1994. The 41 patients included in our study all had isolated femoral neck fractures, and complete financial data were available in their hospital records. Five patients were excluded from the study because they had sustained major and multiple trauma; this served to eliminate the costs of care for injuries unrelated to the femoral neck fracture. An additional 26 patients were eliminated from our study group because of incomplete financial data in their hospital records. No apparent differences were observed regarding patient variables between these 26 excluded patients and those of our study group; therefore, we do not believe that the exclusion of these patients has resulted in a selection bias. Despite this belief, our results and conclusions must be tempered by the fact that 39% (26 of 67 isolated femoral neck fractures) of patients eligible for the study could not be included because of incomplete financial data.

The average age of all 41 patients at the time of injury was 63 years (range 23 to 96). There were 13 men and 28 women. Femoral neck fractures occurred in the left hip in 29 patients and in the right hip in 12 patients.

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