Design Considerations for an Alert System to Prevent Inpatients Falls

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Background. Patient falls can increase length of stay, increase treatment costs, and cause pain and injury. Therefore, it is important to identify hospitalized patients who are at risk for falls. The literature identifies patient specific variables that have been shown to be predictors of "Risk for Falls." These common variables include: age, sex, mental status and functional status and history of falls. Once these patients are identified, prevention programs which target high-risk patients can be implemented.

At Beth Israel Deaconess Medical Center - East Campus, the nursing admission assessment has been on-line since January 1994. The assessment contains both structured entry and free-text data. Related to falls, specific content areas include age, sex, mental status and functional status.

Specific Aims. The overall objective of this study was to design an on-screen alert to identify patients who are at risk for falls. Specifically, we identified the variables that were present in the online nursing assessment that could predict a "Risk for Falls."

Methods. A retrospective analysis in which the nursing assessments of all patients who fell during their hospitalization (n=193) were compared to a sample of nursing assessments of patients who did not fall (n=196). The assessments were reviewed to identify the presence of the following variables: mental status, age, sex, functional status and ability to care for oneself upon discharge. Each variable was dichotomized and analyzed separately. Chi square was used to identify the statistical significance of each variable, and then a logistic regression analysis was performed to determine predictive values of each variable.

Findings. The variables that were found to be statistically significant as predictors for falls were mental status and functional status. We found that in the 372 when patients mental status was assessed, 27 were not alert and/or oriented. This variable was significant (p=0.001). Altered Mental status can be considered a risk factor for falls. Functional status encompasses the independence or dependence of transferring, ambulating and toileting components of the Activity Daily Living (ADL) assessment. Functional status is also significant (p<0.001), which means that being dependent and/or needing assistance to perform any of these activities is an indicator that the patient can be prone to falls. Included in functional status is the patient's ability to care for himself upon discharge. This variable was also found to be significant (p<0.001).

Discussion. The nursing admission assessment contains variables in a structured format that can predict a patient being at "risk for falls." This supports the development of an alert screen appearing on the screen at the time the information is entered. Knowing patients who are at risk for falls is important. On February 1, 1997, an alert based on the above significant variables was incorporated into the nursing assessment. Future work will evaluate the effectiveness of this computerized intervention.

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References
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