

HUMAN FACTORS, AUTOMATION, AND ALERTING MECHANISMS IN  
NURSING HOME ELECTRONIC HEALTH RECORDS

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ABSTRACT

**OBJECTIVES:** Evaluate a clinical decision support system in an electronic medical record (EMR) to determine activation frequencies, patterns of activity, and how automated alerting mechanisms affect clinical responses.

**DESIGN:** Descriptive

**SETTING:** Three nursing homes

**PARTICIPANTS:** Midwestern nursing homes where administrative staff had committed to implementing an EMR and clinical decision support system called OneTouch Technologies.

**MEASUREMENTS:** Automated alerts in the OneTouch EMR including constipation, decline in condition, dehydration, improvement in condition, skin integrity, weight gain, and weight loss were evaluated. Using alert calculations, frequencies of alerts and triggers were counted. Spearman's rank correlations were determined between the frequency of active alerts and the number of secondary diagnoses for residents. Finally, a comparison was made of clinical responses to active and non-active alerts.

**RESULTS:** Alert data from two facilities totaling 155 days were included in the study. The most frequent alerts were dehydration and improvement in condition. One moderately significant positive correlation was found between the number of secondary diagnoses and weight gain alert frequencies in residents who had a CVA. There were

significantly more clinical responses than no clinical responses overall. However, there were as many clinical responses to conditions with no active alerts as active.

**CONCLUSIONS:** Frequencies of alerts is an indicator of how much information has to be managed in order to meet complex issues in nursing home residents. Automated alerts play a role in reminding nursing home staff of potential trouble spots in resident care.