

# Design and Development of a Digital Error Reporting System for a Rural Nursing Home

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## **EXECUTIVE SUMMARY**

*Error reporting systems are traditionally facilitated through completion of paper forms. These forms are largely flawed in design and usability. Use of digital reporting forms may be advantageous in reducing data entry errors, minimizing documentation time, and collecting consistent data items. This case study is a site-specific exploration of error reporting systems for a rural nursing home. A comparative evaluation was conducted of the nursing home's existing narrative, paper form against a newly developed, digital interface. Empirical results showed no overall difference in performance between the interfaces. Expected performance gains may have been offset by the novelty of the digital interface and user familiarity with the existing paper forms. There were, however, differences in user preference, with the digital interface significantly preferred. Furthermore, data entry of accident and near miss information into computer systems was projected to streamline data collection and analysis.*

## **ORGANIZATION BACKGROUND**

The study site is a nursing home facility located in West Texas. The facility is a 120-bed geriatric nursing care facility that employs over 120 employees (with 82 employees in the Nursing department). The center provides round the clock support and three levels of care: traditional long term care, specialized care for patients diagnosed with dementia and related conditions, and skilled care for short term patients needing therapy. This study was focused specifically on the safety perceptions and reporting practices of the Nursing department of the selected facility.

## **SETTING THE STAGE**

Safety and error prevention is a major concern in the workplace. Safety experts generally categorize error events that have actually occurred as accidents, while near misses are referred to as unplanned events that did not result in damage, illness, or injury, but have the potential to do so. Accident and near miss information collected directly from workers are critical to occupational health and safety. Furthermore, error reporting is essential for facilities to shift from a reactive to a proactive approach to safety. The Occupational Safety and Health Administration (OSHA) mandates the collection, investigation, and reporting of all accidents for regulated industries. The collection of near miss information is also required for most regulated industries (Yandziak, Lima, Verboonen, Gomes, & Guerlain, 2006). However, underreporting of accidents and near misses is a major problem across industries (Clarke, 1998).

Traditional accident and near miss reporting is generally facilitated through manual efforts such as completion of paper forms and verbal reports to management. These traditional methods are limited in the type of data that are collected and are generally thought to be too time consuming (Wagner, Capezuti, & Ouslander, 2006; Evans, Berry, Smith, Esterman, Selim, O'Shaghnessy, & Dewit, 2006; Wagner, Capezuti, Taylor, Sattin, & Ouslander, 2005), may not yield sufficient and accurate data (Wagner et al., 2005), and limits the opportunities to conduct quantitative analyses for quality improvement (as cited in Wagner et al., 2006). Johnson (2003) describes that there are also practical problems in the submission of printed reporting forms. The forms are not easily obtained, the staff must be motivated to find one, fill it in, and then submit it to the appropriate manager.

Johnson further explains that many organizations have responded to these problems by introducing digital systems (2003). Use of computerized systems is advantageous in reducing errors in data entry, minimizing documentation time, collecting consistent data items (Wagner et al., 2005), and increasing overall reporting (as cited in Wagner et al., 2006). Furthermore, data entry of accident and near

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