

- Healthcare organizations, to align expectations with a vendor's actual performance, to assist in strategic planning and contract negotiations and to validate decision processes
- Vendors, to monitor their performance in comparison with competitors
- Consultants, for current performance information on a specific company or product
- Healthcare investment firms, to evaluate publicly traded HIT company performance and trends or the competition for a new entrant.

About the Authors

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Literature Review

Does Computerized Physician Order Entry (CPOE) Kill Sick Kids?

Matthew Morgan MD MSc FRCP(C)

Paper

Yong Y. H., J A. Carcillo, S. T. Venkataraman, R. S.B. Clark, R. S. Watson, T. C. Nguyen, H. Bayir, and R. A. Orr. 2005. "Unexpected Increased Mortality after Implementation of a Commercially Sold Computerized Physician Order Entry System." *Pediatrics* 116: 6: 1506 - 13 <<http://pediatrics.aappublications.org/content/vol116/issue6/index.shtml>>.

Question

Does CPOE reduce mortality in severely ill children requiring transfer to a university teaching hospital?

Study Design

Pre and post intervention (CPOE) study, retrospective analysis (2002) at University of Pittsburgh Children's Hospital.

Methodology

18 month study (13 months pre-intervention and 5 months post-intervention). Population of 1942 acutely ill children transferred and admitted, mean age 9 months, 57% required ICU admission. CPOE system Cerner, Corporation's PowerOrder. Demographic, clinical and mortality data analyzed

Results

The mortality rate of children admitted to the hospital increased from 2.80 to 6.57 percent (see graph, next page).

Conclusion

Unexpected increase in mortality coincident with CPOE implementation

Commentary

The retrospective design of this study does not allow me to infer a cause and effect relationship between CPOE and increased mortality in children. The study does however suggest a possible association. In the discussion section of this publication the authors suggest that the deaths may have been linked to delays in obtaining medication which may have been the result of the CPOE's software-design problems and faulty implementation.

I was surprised to learn that the hospital-wide implementation was completed in a blistering 6 days and that clinician training occurred 3 months prior to the implementation. CPOE implementations must be treated with the same respect as the introduction of new surgical procedures or new therapies. All who use them must be trained - just in time - and proficient in their use and these systems must be tested, tested again and piloted in clinical environments. Additionally, CPOE implementations require comprehensive project management and significant team work amongst clinicians, clinical informatics specialists and information system specialists.

Until recently the evidence in favour of CPOE has suggested that it is a dominant strategy when compared to paper-based order entry (improved outcomes, safer and in the long term costs less when compared to paper-based order entry). As a result the suggestion that we should conduct randomized trials evaluating CPOE has been deemed unethical by some. Given the results of this and other recent studies, we should reconsider the need for well-designed prospective studies. At the very least all CPOE implementations should include safety and clinical outcome measures to ensure that we "do no harm".

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