Changes in medical errors after implementation of a handoff program

Starmer AJ, Spector ND, Srivastava R, et al. Changes in Medical Errors after Implementation of a Handoff Program. *New England Journal of Medicine* 2014; **371**: 1803-12

Summary by CM Oliver on behalf of the NELA Project Team

CONTEXT

This ambitious study highlights the importance of accurate and comprehensive communication of information between professionals in ensuring patient safety and the prevention of avoidable harm and provides a model to promote and maintain good handover practices.[1]

The implementation of structured, comprehensive handover procedures, underpinned by focussed training was associated with significant reductions in the incidence of medical errors and preventable adverse events, without detectable increases in the time taken to perform handover.

INTRODUCTION TO THE TOPIC

Considerable variation in patient outcomes has been demonstrated between institutions, suggesting that underlying differences in the structure and delivery of care may be implicated.

At all hospitals the comprehensive provision of medical, nursing and allied health professional expertise is reliant upon shiftwork patterns, which may entail handover of patient care and communication of crucial information multiple times in a 24 hour period.

Adverse events resulting from medical errors has been identified as a significant and continuing source of avoidable death in North America and miscommunication during patient handover has been implicated in the majority of investigated cases.

THIS STUDY

This was a prospective intervention study of a resident handover improvement program at 9 hospitals in the US. Verbal and written handovers by almost 900 clinicians during the inpatient care of more than 10,500 paediatric patients were assessed.

Baseline data was collected prior to implementation of the improvement program bundle for comparison with post-intervention data. No hospital had standardised handover procedures in place at the outset of this study.

The handover bundle comprised:

- Standardisation of oral and 'written' handover (using the I-PASS mnemonic)
- A training program in communication and handover
- A sustainability campaign

Primary outcomes: Pre-defined medical errors and preventable adverse events

Secondary outcomes: Miscommunications and the burden imposed by changes to handover

The authors attempted to match pre- and post-intervention data for time of year and to adjust for patient complexity.

FINDINGS

Significant reductions in the overall incidence of medical errors and preventable adverse events were observed in this study, without concomitant increase in the time taken by residents to perform handover.

Variation in the incidence of errors was observed and it is notable that a medical error was identified in more than half of reviewed cases prior to implementation of the improvement program at two hospitals.

COMMENTS

No significant change in primary outcomes was detected at three hospitals, which may reflect variation in the implementation or uptake of the program or baseline characteristics of the participating sites.

Despite very high rates of inclusion of 'medication lists' in patient handovers, there was no demonstrable improvement in the rate of medication-related errors after implementation of the improvement program and they remained common. This suggests that further work should target these errors.

LESSONS FOR EMERGENCY SURGERY

This improvement program provides a framework for structured handover of patient care, but central to this is the need for accurate and comprehensive communication between healthcare professionals to prevent avoidable errors and improve patient outcomes.

Given the limited opportunities for preoperative interventions, the complexity and severity of acute and chronic pathophysiologies encountered in emergency general surgery and the predominance of shift patters, the importance of accurate, comprehensive communication between healthcare professionals cannot be overstated.

1 Starmer AJ, Spector ND, Srivastava R, et al. Changes in Medical Errors after Implementation of a Handoff Program. *New England Journal of Medicine* 2014; **371**: 1803-12