

Effective interventions and implementation strategies to reduce adverse drug events in the Veterans Affairs (VA) system

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Background: Adverse drug events (ADEs) account for considerable patient morbidity and mortality as well as legal, operational and patient care costs. In Veterans Affairs (VA) hospitals in the USA, all serious adverse events and “potential” adverse events are reviewed using root cause analysis (RCA). This study characterised RCA reports associated with ADEs to determine what actions VA RCA teams took to reduce the number or severity of ADEs, and to evaluate which actions were effective in doing so.

Methods: Every medication-related RCA submitted to the VA National Center for Patient Safety in the fiscal year 2004 (143 reports), and one medication-related aggregated RCA from each facility (111 reports covering 4834 ADEs) were reviewed and coded. Facilities were interviewed about specifics of their reports and the results of their interventions.

Results: The commonest classes of medication for which ADEs were reported were narcotics, chemotherapy, and diabetic and cardiovascular medications. The most common types of ADE were “wrong dose”, “wrong medication”, “failed to give medication”, and “wrong patient”. 993 actions were taken to address these ADEs, the majority (75.7%) of which were reported to be fully implemented. Improvements in equipment and improving clinical care at the bedside were associated with reports of improved outcomes ($p=0.018$, and $p=0.017$ respectively), and training and education were negatively correlated with reports of improved outcome ($p=0.005$). Improving the process of medication order entry through the use of alerts or forcing functions was positively correlated with reports of improved outcomes ($p=0.022$). Leadership support and involving staff were associated with higher implementation rates ($p=0.001$ and $p=0.010$, respectively).

Conclusions: Changes at the bedside and improvement in equipment and computers are effective at reducing ADEs. Well-organised tracking and support from leadership and staff were characteristics of facilities successful at improving outcomes. Training without action was associated with worse outcomes.