Detecting Adverse Drug Events Using a Nursing Home Specific Trigger Tool

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Adverse drug events (ADEs) are defined by the Institute of Medicine (IOM) as, "injuries resulting from a medical intervention related to a drug."[1] Institutionalized elderly experience ADEs at a rate as high as 10.8 events per 100-patient months, often as a result of polypharmacy, multiple comorbid illness, and difficulty with monitoring prescribed medications.[2–4] This translates into approximately 135 ADEs each year in an average size nursing home (NH; bed size of 105) or approximately 2 million events a year among all U.S. NH patients. ADEs represent the most clinically significant and costly medication-related problems in NHs and are associated with 93,000 deaths a year and in as much as $4 billion of excess healthcare expenditures.[5–6] Despite the consequences and costs associated with ADEs, the vast majority of these events go undetected using traditional methods including comprehensive chart reviews, direct observation, and voluntary reporting. Therefore, alternative surveillance strategies are needed in NHs to supplement existing detection strategies and minimize the potential consequences of ADEs.

The trigger tool methodology, developed in part by the Institute of Healthcare Improvement (IHI), greatly simplifies the chart review process by allowing rapid and systematic examination of charts to extract relevant data for the detection of potential ADEs. The technique, which requires minimal training, appears to increase the rate of ADE detection 50-fold from traditional reporting methods.[7] The triggers themselves represent specific events including the ordering of certain medications (e.g., antidotes, such as Vitamin K), the results of certain laboratory studies (e.g., supratherapeutic serum medication concentrations, such as digoxin level), and change in clinical status or new sign or symptom (e.g., drug-induced fall or drug-related rash). Since the triggers are likely to differ based on specific clinical setting, multiple IHI trigger tools have been developed including those for: mental health settings, adult inpatient, adult outpatient, adult intensive care units, adult peri-operative care units, pediatric inpatient, and neonatal intensive care units.[8] Many of the clinical setting-specific trigger tools have been successfully used to demonstrate the benefits of low-cost error detection strategies that produce consistent, reliable, and relevant data.[9–13]

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