

In a system of limited resources we need to allocate these resources wisely and ethically. Any system for recording and tracking medication error rates needs to be easy to manage and should minimize the use of professional staff.

References

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Education Regarding Medication Order Errors

Marshman and others¹ have provided a meaningful perspective on the prevalence of medication error events in Ontario acute care hospitals. Within their conclusion, the authors suggest staff education as a means to reduce event rates. Here, we reveal the preliminary results from an educational series with internal medicine medical residents at an academic medical centre.

Whereas Marshman and others examined medication error events, in our study we observed the effect of a bimonthly educational session on the number of inappropriate medication orders received by the inpatient pharmacy. All medication orders that were flagged by staff pharmacists as inappropriate were included in the analysis. Inappropriate medication orders were defined as one of the following: an order using unapproved abbreviations (as mandated by the Joint Commission on the Accreditation of Healthcare Organizations), a wrong or missing frequency, a wrong or missing route, a wrong or missing dose, a wrong medication, a "resume medications" order, a "prn" (as needed) order

without an indication, a double-range order, an order for which the patient has an allergy, an incomplete order form, or an order without the prescriber's signature. The educational intervention to internal medicine residents was a 1-h initial didactic lecture followed by 10-min descriptions of recent and pertinent hospital medication order errors every 2 weeks.

This ongoing investigation was approved by the University of Toledo Health Sciences Campus institutional review board. One month of baseline data were collected before the educational sessions began. Among all inpatient pharmacy orders, initial data showed an error rate for medication orders of 2.9% (1116 of 38 275 orders). Following the initial didactic lecture and 3 follow-up sessions, the error rate was reduced to 1.9% (657 of 35 441 orders) ($p < 0.001$). Even though the volume of medication orders fell by 7.4%, there was a 36% relative reduction in medication order errors. About 30% of the time that staff pharmacists spent on order entry was used for clarifying medication order errors, and the relatively few medication orders with problems took a significant amount of time to resolve.

The limitations of this study include the relatively brief duration of the study thus far and the large number of prescribers (other than internal medicine residents) that are accounted for in the error rates. Within the institution, medication orders are predominately written by residents. Internal medicine and subspecialty services form a large percentage of overall institutional medication orders; thus, changes in error rates within this subgroup of prescribers could help delineate an effect of the educational intervention. Therefore, the education series limited to the internal medicine residents served as an excellent pilot before it was extended to other institutional residency programs. When the numbers of medication order errors were examined by patient unit, we found significant reductions for units with internal medicine activity; other patient care areas did not have such reductions.

Interestingly, a search of the medical literature (MEDLINE, International Pharmaceutical Abstracts, Iowa Drug Information System) did not reveal any previous reports of the impact of an educational intervention on prescriber error rates. Interventions to reduce medication errors that have been proven successful need to be widely disseminated. As well, each institution should compile such data to both inform and assess the impact of future attempts to lower medication error events. Given attempts to be ever more efficient in our use of health care resources, knowledge of successful interventions to reduce medication-related errors is prudent.

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