MEDICATION ERRORS


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By itself, information from hospital incident reports cannot provide an accurate or meaningful way to measure the effectiveness and safety of medication use. Research has confirmed that many medication errors go undetected, including those that cause harm to patients. Even when errors are detected, they are sometimes not reported.

Practitioners may neglect to report errors that have been intercepted before reaching patients unless the organization clearly defines and communicates all situations that should be reported. Once an error has been reported, practitioners might not continue to report similar errors, believing that they have adequately informed the organization’s leadership about the problem. Moreover, an inability to remedy reported problems, insufficient feedback about actions taken to prevent further occurrence, complex and time-consuming reporting systems, and fear of personal and professional consequences also inhibit the reporting of errors. In fact, focusing on error rates derived from spontaneous reporting systems often has the effect of placing undue pressure on practitioners to report fewer errors. However, there are more reliable methods that organizations can employ to measure the safety of medication use and the effectiveness of error-prevention strategies.

Understanding that medication safety can be vastly improved by reducing potential adverse drug events (PADEs) is essential to the meaningful measurement of medication use and successful error-prevention efforts. Although serious errors that result in harm to patients do occur occasionally, the potential for these catastrophic events may lurk in many organizations. Measuring PADEs along with adverse drug events (ADEs) that cause minor and serious harm provides more consequential and precise data upon which organizations can act to prevent errors and to improve medication safety. In addition, error-prevention efforts are more successful when the focus is on specific high-alert drugs and error-prone situations.

PADEs with drugs used for chemotherapy, for example, can be measured by determining the incidence of:

- erroneous medication orders (e.g., using faulty abbreviations, prescribing course doses instead of single doses, forgetting to indicate doses in mg/m², or neglecting to round off doses above 10 mg).
- the percentage of orders that exceed maximum safe doses during a review.
- a failure to communicate the rationale for altering a dose when prescribing.
- omitting essential data from order forms, such as current laboratory values (e.g., a complete blood count, creatinine levels) and the patient’s height, weight, body surface area, and age.

PADEs with drugs used for allergies can be measured by reviewing:

- daily computer reports to determine the incidence of patient profiles without allergy information
- the percentage of orders requiring intervention to prevent administration of drugs to which patients are allergic.

Similarly, reviewing the use of “trigger” drugs that might indicate an allergic response (e.g., diphenhydramine or corticosteroids) can enhance the detection of ADEs.

PADEs with the use of heparins can be measured by determining:

- the number of patients whose blood levels have not reached therapeutic concentrations within 24 hours after initiation of treatment.
- the incidence of activated partial thromboplastin times (aPTTs) above 100 for all patients who are receiving heparin.
- the mean number of aPTTs daily per patient receiving intravenous heparin.
- adherence to heparin protocols.

ADEs can be measured by determining the incidence of significant bleeding, administration of packed red blood cells, or the use of protamine.

Continued measurement and visual display of data for PADEs and ADEs together on one chart, with notations at points where various system-based changes have occurred, can clearly demonstrate the effectiveness of error-prevention strategies. Although spontaneous reports of potential and actual errors can be useful for augmenting measurements, their sole use in determining a rate is meaningful only when they are used to demonstrate an increase or a decrease in the error-reporting rate.

ISMP, a nonprofit organization located in Huntingdon Valley, Pennsylvania, provides independent practitioner review of medication errors submitted to the national MER program, operated by the U.S. Pharmacopeial (USP) Convention, Inc., of Rockville, Maryland, in cooperation with ISMP. ISMP also reports on progress made in correcting medication errors and problems.

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