Making Computerized Screening Work for You

John R. Horn, PharmD, FCCP, and Philip D. Hansten, PharmD

Drs. Horn and Hansten are both professors of pharmacy at the University of Washington School of Pharmacy. For an electronic version of this article, including references if any, visit www.hanstenandhorn.com.

Although computerized drug interaction screening has been an important part of prescription order processing for many years, several limitations have been noted.[1] Foremost among these problems is "alert fatigue," which occurs when practitioners are inundated with drug interaction alerts that they believe to be trivial or inappropriate for their patients.

Alerts that do not contribute to the care of the patient may result from a number of causes, including patients no longer taking one of the drugs, patients stabilized on the drug combination, obvious pharmacodynamic interactions, or the choice of a drug combination because of the potential interaction between the drugs. These inappropriate alerts lead to the disregard of nearly all alerts, including those that may be important to ensure patient safety.[2]

An all too common response to the perceived excess alerting is to limit the number of drug interactions the screening program uses as it reviews patient profiles. Shutting off whole groups of potential interactions often is used to limit the number of interaction alerts generated by the software.

Most drug interaction screening programs allow users to select one or more significant classes of interactions for inclusion in the automated screening. Thus, several significant classes are eliminated from the screening process.

There is a risk that elimination of lower-significance interactions will miss important interactions. In a study of potential drug interactions with transplant medications, for example, it was noted that, if the software was set to alert for only contraindicated pairs, 90% of clinically significant interactions would be missed.[3] When pharmacists limit their drug interaction software to a subset of the total database, they are assuming that none of the ignored interactions will cause an adverse outcome in a patient.

If a pharmacy elects to disable alerts for one or more classes of interactions, the pharmacists must be sure to review the list of interactions that will no longer trigger alerts. They may find clinically significant interactions that have been designated in the database as having limited significance.

When pharmacists limit their drug interaction software to a subset of the total database, they are assuming that none of the ignored interactions will cause an adverse outcome in a patient.

The pharmacists should keep in mind that interactions are classified based on the rules used by the developers of the software. They must be certain that they know exactly what rules were used to classify the interactions in the software they are using. For instance, some interactions may have had their classification downgraded due to limited documentation. The interactions that are in the disabled classes will not be used in the screening of some patients' drug regimens. If these interactions are based on known mechanisms, however, they may be just as risky to patients as interactions that have been more thoroughly documented.

The authors have recently been working with drug interaction software to reclassify individual drug interactions. This reclassification involves a review of each interaction and consideration of its potential to cause patient harm based on a set of established rules. The ability to modify software in this manner is a newly offered feature that should be adopted by all providers of drug interaction screening software. Each interaction can be reclassified without concern that some interactions will be inadvertently removed from active search. Drugs that have been removed from the market or are not available in a health care system's formulary can be deleted.

Although many users may not want to invest the time necessary to review the thousands of interactions in the database or may not have the expertise to evaluate each interaction, the ability to have the review done is an important step in making drug interaction screening software more flexible. Drug interaction software could be made even more flexible by additional customization by users.

Computerized drug interaction screening programs provide important assistance in ensuring safe medication dispensing and use. As the software evolves to enable site- and perhaps patient-specific changes, pharmacists will be able to customize the software to best fit their practice needs. Customization should be attempted only by those with expertise in drug interactions and with careful consideration of the consequences likely to result from software changes. PT

For a list of references, send a stamped, self-addressed envelope to: References Department, Attn. A. Stahl, Pharmacy Times, 241 Forsgate Drive, Jamesburg, NJ 08831; or send an e-mail request to: astahl@ascendmedia.com.