Warning! Don’t Miss Important Computer Alerts

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**Problem:** Although pharmacists typically enter prescriptions and orders into their computers, specially trained pharmacists or interns perform this function in some settings. When this is the case, the pharmacist later verifies that the order has been entered as prescribed at the same time that he or she is ensuring the appropriateness of the medication and verification that the proper drug and dose have been prepared. Pharmacists typically check this process by comparing the order, pharmacy label, and final product with each other. As long as the original prescription is included in the checking process, this may seem to be an acceptable way to verify the order entry and the preparation of medications.

However, one major safety concern remains: the checking pharmacist might not know about alerts that were displayed during order entry and that were bypassed. As long as the order was entered as prescribed, the pharmacist might not have been in a position to view computer alerts about a drug interaction, an allergy, a duplicate therapy, an excessive or a subtherapeutic dose, or another contraindication.

Bypassing alerts can often be clinically appropriate, but important warnings can be overridden inappropriately. Bypassing an alert appears to be a rather common practice, especially if the viewer of the information does not value the significance of the alert. The alert systems used during order entry are often quite sensitive so that users do not miss any critical information. However, this sensitivity comes at a cost: frequent false alarms or warnings that might not be clinically significant. Pharmacists can usually cite many examples of these false alarms.

Besides being a nuisance, frequent false alarms can lead to alert fatigue and complacency—or the “cry wolf” syndrome. Individual quirks in some pharmacy systems also contribute to missed alerts—conditions that should have triggered an alert but did not. Thus, general annoyance and mistrust in the alert system could be one reason why it may seem acceptable to not worry about the alerts that pharmacy technicians or interns may choose to ignore.

**Safe Practice Recommendations:**

1. **Reducing the sensitivity of the alert system.** The most direct way to curtail false alarms is to reduce the system’s sensitivity. For example, with many pharmacy systems, users can choose the level of drug–drug interaction alerts (e.g., level 1–3) that appear during order entry. Although the existing level system is not perfect, it offers some relief from false, low-sensitivity alarms. However, a reduction in sensitivity can also lead to a tradeoff between false alerts and missed alerts.

2. **Identifying priority alerts.** Another option is to identify conditions that signal the most serious potential adverse drug events, using the list to limit and customize computer alerts. For example, a relatively small, finite group of drug interactions is clinically important in terms of their pharmacodynamics and pharmacokinetics. Published lists of these priority conditions can be used to target customized drug–drug interaction alerts or to serve as a resource for pharmacists who are checking orders.

Pharmacists can also identify priority alerts by reviewing previous pharmacy interventions regarding drug–drug interactions, allergies, and duplicate therapies to learn the conditions that actually warranted a call to the prescriber and changes in drug therapy. Likewise, pharmacists can be encouraged to report encounters of invalid warnings so that they can be altered or removed from the pharmacy computer system.

After high-priority alerts have been identified, it should be impossible for order-entry technicians or pharmacy interns to bypass them. Instead, these orders should remain in a queue for release after the pharmacist views and responds to the problem. If the pharmacist eventually bypasses a high-priority alert, the reason should be documented so that it can be used to improve the quality of alerts.

3. **Printing a daily report of bypassed alerts.** Most computer systems allow a report of bypassed alerts to be printed for pharmacist review each day. This may be during the nighttime hours in some locations or during other periods when the workload is lower, staffing is better, or an employee is scheduled for this purpose. This is much more achievable if reports for bypassed priority alerts are created and reviewed. Otherwise, the length of the report could prohibit review and follow-up. The exact procedure for follow-up with problematic orders also needs to be described, especially if the review takes place at night.

Although a retrospective review of bypassed alerts is not optimal, many drug interactions, even severe ones, do not adversely affect patients until at least a few days after the concurrent administration; thus, there may be time to take action before harm occurs. The same might not be true for some duplicate therapies, allergies, or dosing errors, but harm can be mitigated if the problem is discovered quickly.

4. **Printing alerts on labels.** Some order-entry systems have the capability of printing any significant alerts on a label along with the other product labels that are created. This way, the pharmacist can view the bypassed alerts when

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checking the final product before dispensing it. However, unless the labels with alerts are available in real time, the logistics of this option are impractical for inpatient settings, particularly if most medications are dispensed via automated dispensing cabinets.

REFERENCES


The reports described in this column were received through the ISMP Medication Errors Reporting Program (MERP). Errors, close calls, or hazardous conditions may be reported on the ISMP Web site (www.ismp.org) or communicated directly to ISMP by calling 1-800-FAIL-SAFE or via e-mail at ismpinfo.org.