

# ISMP Survey Results: Pharmacy Interventions Can Reduce Clinical Errors

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More than 600 pharmacists responded to a survey conducted by the Institute for Safe Medication Practices (ISMP) on pharmacy interventions to tell us about their experiences with factors that impede or facilitate pharmacy interventions; the types of interventions currently performed; how the information is received by physicians; and how the information is documented and used.

Although our survey findings suggest that clinical interventions are firmly rooted in the way pharmacy services are provided, the results also tell a story of barriers to optimizing this medication safety strategy. When these barriers interfere with the pharmacist's ability to perform interventions, serious errors may befall the patient.

For example, we recently heard about an error that could have been avoided if pharmacy interventions had included verification that only diabetic patients are to receive hypoglycemic medications. A 79-year-old hospitalized woman (Patient A) accidentally received seven doses of the oral hypoglycemic agent glyburide (DiaBeta, Sanofi-Aventis), which was intended for another patient (Patient B).

A nurse took a verbal order for glyburide 10 mg orally twice daily for a diabetic patient and correctly transcribed it onto an order form. However, the order form was stamped via an addressograph plate for Patient A, not the intended patient (Patient B). The pharmacy received a copy of the order and dispensed the medication. Because Patient A did not have diabetes, she eventually developed symptoms of hypoglycemia, necessitating her transfer to the intensive-care unit.

Fortunately, she recovered without permanent harm.

To prevent such errors, some pharmacies forbid dispensing insulin or oral hypoglycemic drugs unless the pharmacist confirms that the patient has diabetes, is receiving total parenteral nutrition, is not tolerating the glucose load, or has another therapeutic need for the medication. If there is no reliable way to obtain this information in a timely manner through routine mechanisms, the pharmacist must *specifically seek out this information* and intervene if the therapy does not appear to be indicated. Even though clinical actions like this can help lay the foundation for safe medication therapy, our survey findings suggest that pharmacists face serious barriers when they try to perform this level of service or health care.

In our survey, lack of technology support, inadequate staffing, and an inefficient documentation process were the most commonly cited barriers to pharmacy interventions. Regardless of hospital size, only about 25% of respondents noted that proper technology was in place to aid clinical decision-making. Just 16% of all respondents stated they had adequate staffing levels to carry out pharmacy interventions.

Despite these barriers, our survey clearly shows that both targeted and routine pharmacy interventions occur regularly in hospitals, that they have been well accepted by most medical staffs, and that interventions have been used, at least to some degree, to reduce the risk of medication errors. Following is a summary of our findings.

**1. Intervention types:** According to the respondents, the most common routine interventions performed in the pharmacy included ensuring that orders were complete (89%), checking for allergies (87%), and verifying doses (86%). Targeted pharmacy interventions performed in patient-

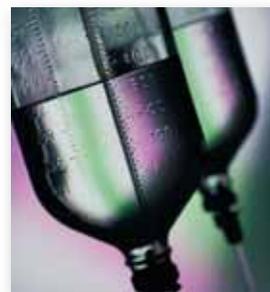
care units were reported less frequently; the most common categories included antimicrobial therapy (31%), renal dosing (30%), and monitoring of special populations such as pediatric patients (29%). Larger hospitals and hospitals with physician and pharmacy training programs were more likely to perform these targeted interventions. Overall, the least common categories for interventions included anticoagulation and narcotics for pain control.

**2. Communication:** Half of all respondents communicated at least 80% of interventions directly to prescribers, and about a third of the respondents noted that pharmacists communicated interventions directly to prescribers more than 90% of the time. Hospitals with physician training programs were more likely to communicate interventions directly to physicians.

**3. Physician acceptance:** Ninety-four percent of respondents felt that the medical staff, as a whole, responded well to pharmacists' interventions. In fact, about a third reported that physicians accepted more than 95% of recommendations; only 10% reported that physicians accepted fewer than 80% of pharmacy recommendations. Hospitals with physician or pharmacy training programs reported even higher levels of acceptance of interventions by the medical staff.

**4. Documentation:** About 75% of respondents documented pharmacy interventions; of those, however, only 61% felt that the documentation was detailed enough to guide improvement. Larger hospitals documented interventions more frequently than hospitals containing fewer than 100 beds. Paper (33%) and the pharmacy computer (44%) were the most common tools for documenting the interventions. Only 3% of hospitals use personal digital assistants (PDAs).

**5. Use of interventions:** Just two thirds of respondents reported that pharmacy interventions had been presented to com-



mittees and the staff for the purpose of improving the prescribing process. Even fewer respondents (44%) used pharmacy interventions to plan and carry out education for the medical staff. Similarly, only two thirds of hospitals reported that they used pharmacy interventions to improve the prescribing process in the past year.

6. *Evaluation of pharmacists' performance:* Fewer than half of all respondents reported using interventions as a measure of performance when evaluating pharmacists.

Overall, our survey indicates that vital clinical pharmacy activities take place every day in hospitals. Yet hospitals are struggling in some way to perform pharmacy interventions effectively and to use the information to improve the prescribing process and reduce the risk of medication errors.

For instance, the smaller hospitals reported fewer barriers to performing interventions, but they also reported less success using the information to provide educational programs and to improve the prescribing process. Regardless of size, type, or teaching affiliation, one point is obvious: hospitals are missing out on a virtual gold mine of information that can lead to a reduction in errors.

In summary, it seems obvious that it would be beneficial for *P&T* readers to take the time to review their pharmacy intervention programs and to maximize their capacity to reduce medication errors.

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