



# Using an Online Safety Reporting System to **Track Pharmacist Clinical Interventions**

IN 2000, SHORE MEMORIAL HOSPITAL, A NONPROFIT, 296-BED COMMUNITY hospital in southern New Jersey, developed a database to track safety events. The program, known as the SMH Safety and Quality Tracking Database, was developed to provide online reporting of adverse drug events, medication events, and other hospital-related safety events. Implementation of the database has since eliminated manual reporting of events and has met the hospital's liability insurance carrier's requirements for reporting, investigation, and follow-up for events. The online database has also allowed for anonymous reporting, which met the hospital's goal of a non-punitive approach to event reporting.

Pharmacists recognize the value of **reporting their interventions** during the subsequent action planning that occurs to correct identified issues.

The database was designed by a member of our IT department, with feedback from key users. The system integrates with the hospital's information system to auto-populate patient demographic and hospital formulary information, thereby reducing our documentation steps and standardizing the reporting process.

Reported events are reviewed by the quality assurance staff and assigned to the appropriate managers for investigation and follow-up. Serious events result in a phone call from quality assurance to the manager for immediate follow-up and eventually a "root cause analysis" meeting. Reports are generated from the database by the different reporting categories, which allow for the identification of trends. Various committees review the reports and information in the database as part of their action planning and process improvement activities.

## Tracking Pharmacist Interventions

By 2004, our online reporting system was well established and utilized by hospital employees and independent medical staff. While a variety of safety events were being reported online, pharmacists' clinical interventions continued to be tracked manually in an Excel spreadsheet, and were underreported. These clinical interventions included the avoidance of medication events due to allergy cross-sensitivities, drug-

Figure 1. A documentation screen developed by SMH to track pharmacist clinical interventions

Ordered Drug	Dose	Route	Freq

Recomm Drug	Dose	Route	Freq

drug interactions, and dosage adjustments. Reporting these activities online with the SMH Safety and Quality Tracking Database offered a way to integrate the retrospective and prospective reporting of events through a database integrated with the hospital information system, as well as an easier way to report pharmacists' clinical activities. We recognized that this method for tracking interventions stood to increase reporting compliance.

After several meetings with IT, documentation screens were developed (See Figure 1) to integrate intervention tracking with the SMH Safety and Quality Tracking Database. Each pharmacist was assigned his or her own user name and password, allowing us to track interventions by pharmacist. Training of the pharmacy staff was completed in small groups, and we reinforced that documenting interventions was the approved process to demonstrate the effectiveness of pharmacists' clinical activities. It was also reinforced that order clarifications play a role in avoiding potential medication events. The database is available on every networked PC in the hospital, so pharmacists can easily access it during their decentralized activities. Reports were developed to track and trend interventions by category, medical staff, and reporting pharmacist.

## Results

The online reporting of pharmacist clinical interventions began in the fourth quarter of 2004. An increase in reporting was noted immediately. In January 2004, prior to online reporting, only 20 clinical interventions had been documented by pharmacists. In January 2005, 650 clinical interventions were reported, and in January 2006, 1,009 were reported (See Figure 2). Once pharmacists began automatically adjusting the dosing and/or frequency of medications based on a patient's renal function,

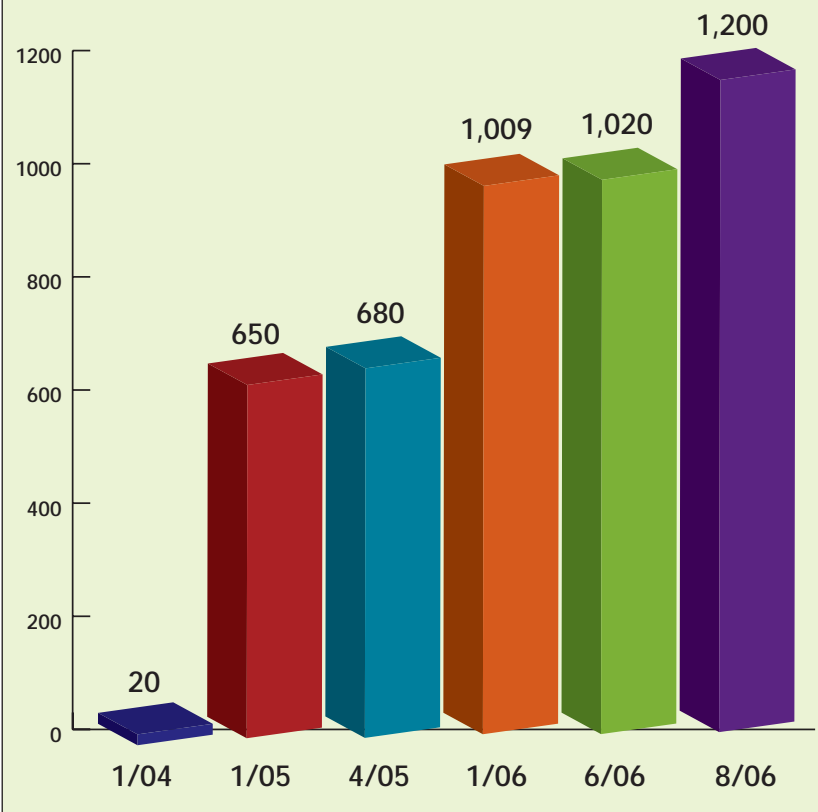


## Case Study

we saw a dramatic increase in reporting. Some examples of documented clinical intervention trends and the subsequent process improvements implemented include:

- Reports identified prescribers who were not adhering to antibiotic guidelines.
  - A pre-printed anti-infective order form was implemented to ensure approved guidelines for use were followed.
  - A pharmacist rounds with infectious disease physicians twice weekly.
- Reports noted a trend with falls after diuretics were administered later in the day.
  - Diuretic administration times were changed.
  - An alert for nurses was added for medications that can increase the risk of falls.
- Reports showed that patients were not always dosed appropriately for renal function.
  - Pharmacists now automatically adjust dosing based on estimated creatinine clearance.
- Reports identified a trend in ED patients being prescribed therapies that were cross-sensitive with reported allergies.
  - A decentralized pharmacist works in the ED from 1:00 to 8:30<sup>PM</sup> on weekdays and reviews orders prior to medications being pulled from the automated dispensing system.

### Average Interventions per Month



Pharmacists recognize the value of reporting their interventions during the subsequent action planning that occurs to correct identified issues. They continue to provide input for streamlining the reporting process, including the implementation of drop-down menus with common intervention options, a pre-built list of prescribers with hospital privileges, and standardized cost-avoidance tracking.

Since beginning to track pharmacist interventions online, a new pharmacy information system, with its own intervention documentation tool, has been installed. After reviewing the steps involved in documenting with the new tool, our pharmacists opted to continue documenting interventions with the SMH Safety and Quality Tracking Database, because of the database's link to our event-reporting system. This link enables integrated trending of retrospectively reported medication events and avoidance of medication events through pharmacist clinical interventions. Our pharmacists also value our database's ease of use and our ability to customize the reporting screens in the database. As pharmacy expands its clinical monitoring of drug therapy, such as automatic dosing adjustment for erythropoietin stimulating agents, the database can be adjusted to allow documentation of these activities.

#### Conclusion

Our online reporting tool has been well received by the health care professionals at Shore Memorial Hospital. It encourages the reporting of events, which is essential to our process improvement activities. Although there are still opportunities to improve the database, it has clearly had an impact on the quality of the care provided to our hospital's patients. ■

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