Letter to the Editor

Appropriate Assessment of Patient Medication Allergies

Craig Sastic, PharmD, RPh*

To the Editor:

A medication allergy is defined as an immune-mediated adverse drug reaction.¹ This response may occur to a wide range of medication classes including antibiotics and narcotic analgesics. Reported medication allergies often result in patients receiving alternative therapies that are often less effective, more toxic, and costlier than an otherwise preferred regimen.

This is especially problematic when dealing with serious infections in hospitalized patients. It has been estimated that up to 90% of patients with a reported antibiotic allergy do not experience a true allergic reaction, which would preclude the administration of a desired antibiotic.² The most common and most significant of which is likely the reporting of penicillin allergies. Many reported allergic reactions occurred years ago, when manufactured products were less pure; these reactions could have been to contaminants and not the actual drug. Another common occurrence is reporting symptoms of an illness or a common side effect of a drug as a medication allergy.³ Patient over-reporting of medication allergies is an additional way collected information may be incorrect. One study found that 9% of patients who initially reported a penicillin allergy stated they had no reaction upon further questioning.⁴ This may lead to increased length of stay, increased duration of treatment, costlier antimicrobial usage, unnecessary prolonged broad spectrum therapy, and increased antimicrobial resistance.⁵

We conducted a study (2012-2013) designed to improve accuracy and specificity of reported medication allergies for inpatients at a 262-bed community hospital in southern New Jersey by reducing the percentage of unspecified reactions in the electronic medical record.

This study was a prospective quasi-experimental design utilizing baseline data collection, an intervention period, and post intervention data collection. Baseline data were collected following a monthly 1-day review of all adult inpatient medication profiles for 3 consecutive months. A total of 520 patient

profiles were examined with 505 total medication reactions reported. These were divided into 3 groups based on additional information included in the electronic medical record. All reactions were classified as either unspecified, true allergies, or intolerances.

Following baseline data collection, education of nursing and unit clerks was completed via the online HealthStream system to emphasize the importance of complete allergy reporting and to demonstrate the procedure for updating the electronic medical record. Post intervention, 559 inpatient profiles were evaluated with 484 total medication reactions being reported and classified as above.

Statistical analysis of data was performed by utilizing a *t* test to determine significance for the percentage of unspecified medication reactions. Additionally, the Pearson chi-square test was used to examine results for a statistically significant difference in the absolute number of unspecified reactions, true allergies, and medication intolerances.

Following the online educational session, the percentage of unspecified medication reactions was reduced from 67% to 52% ($t = 3.81$, $P = .019$; 95% CI, 3.9-24.9). There was an absolute increase in the percentage of true allergies (18%-27%) and intolerances (15%-21%) reported. However, neither of these reached statistical significance ($P = .083$ and $.193$, respectively). Further analysis revealed statistically significant changes in the total number of unspecified allergies [$\chi^2(1, N = 989) = 22.70$, $P < .001$], true allergies [$\chi^2(1, N = 989) = 11.78$, $P = .001$], and medication intolerances reported [$\chi^2(1, N = 989) = 5.62$, $P = .018$].

Incomplete medication allergy assessments can complicate an already difficult medical situation. Reported allergies often result in patients receiving sub-optimal therapy for potentially life-threatening conditions. Implementation of a simple online educational session resulted in a statistically significant improvement in documentation of patient medication allergies. Increased reporting accuracy and specificity may allow

*Antimicrobial Stewardship Pharmacist, Inspira Health Network Department of Pharmacy Services, 1505 West Sherman Avenue, Vineland, NJ 08360; phone: 856-641-7557; e-mail: sasticc@ihn.org

a prescriber to utilize a drug regimen that otherwise would have been avoided. Ultimately, better allergy reporting can help health care providers optimize medication therapy, decrease the incidence of adverse drug reactions, reduce drug cost, decrease inpatient length of stay, and ultimately improve overall patient care.

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