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FACTORS ASSOCIATED WITH ORDERING LABORATORY MONITORING OF HIGH-RISK MEDICATIONS

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Abstract

Background

Knowledge about factors associated with provider ordering of appropriate testing is limited.

Objective

To determine physician factors correlated with ordering of recommended laboratory monitoring tests for high-risk medications, accounting for patient characteristics.

Methods

Analysis of the administrative claims and electronic medical records of patients prescribed a high-risk medication requiring laboratory monitoring in a large multispecialty group practice between January 1, 2008 and December 31, 2008. The outcome is a physician order for each recommended laboratory test for each prescribed medication. Key predictor variables include physician characteristics, including age, gender, specialty training, years since completing training, and prescribing volume. We used multivariable logistic regression to identify the independent association of physician and patient characteristics with ordering of laboratory tests to monitor medications after adjustment for potential confounders, taking into account clustering of drugs within patients and patients within providers.

Results

Physician orders for laboratory testing varied across drug-test pairs and ranged from 9% (Primidone–Phenobarbital level) to 97% (Azathioprine–CBC) with 50% of drug-test pairs in the 85-91% ordered range. Failure to order a test was associated with lower provider prescribing volume for study drugs and whether the physician was a specialist (primary care providers were more likely to order tests than specialists). Patients with lower patient comorbidity burden and younger patients were less likely to

have appropriate tests ordered. Drug-test combinations with black box warnings were more likely to have tests ordered.

Conclusions

Interventions targeting providers should be addressed at those subgroups with the greatest potential for improvement: providers with lower frequencies of prescribing high-risk medications, and healthier and younger patients. Drug-test combinations with black box warnings have higher ordering rates, but many medications without such warnings also have evidence of harm, thus efforts to improve testing are necessary for all medications shown to be high-risk.