Background: Physician prediction of patient medication adherence to chronic therapy is unreliable, but the accuracy of physician predictions is largely unstudied for new prescriptions. Our aim was to determine if provider perception of the likelihood a patient will pick up a medication is an accurate predictor of primary medication nonadherence (PMN).

Methods: We conducted a prospective cohort study as part of a randomized clinical trial (RCT). Providers at 24 primary care and family medicine Geisinger clinics were asked to complete a “best practice alert” (BPA) within the electronic health record (EHR) when placing an order for a new anti-hypertensive, anti-diabetic, anti-hyperlipidemic or anti-asthmatic medication. The BPA asked: “In your opinion, how likely is it that this patient will pick up this medication?” The provider could select from a 5-level Likert item with responses ranging from “very unlikely” to “very likely.” Provider response was correlated to the principle outcome variable (medication first fill after 14 days as identified from the records of the pharmacy to which the prescription was transmitted).

Results: A total of 4822 patients over 11 months were included and 4532 (94%) patients filled their prescription within 14 days. Providers answered the BPA 89% of the time. Among respondents, most felt their patients would be likely or very likely to pick up their new medication (90.6% versus 86.8% of providers chose likely or very likely among adherent and nonadherent groups respectively). Only 10 (3.9%) of new medication orders not filled (nonadherent) versus 110 (2.7%) filled (adherent) were suspected by providers to be unlikely or very unlikely to be picked up, resulting in only an 8.4% positive predictive value for PMN.

Conclusion: Our study suggests that physicians overwhelmingly believe their patients are likely/very likely to pick up their first prescription. A physician’s intuition about a patient’s likelihood of filling a new medication does not reliably identify patients who do not fill new prescriptions for chronic medications.

Inability of Primary Care Providers to Predict Medication Fulfillment of New Prescriptions

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ABSTRACT

INTRODUCTION

Medication nonadherence is a significant barrier to effective treatment of chronic conditions, increasing health care costs by billions of dollars per year and leading to increased mortality and reduced quality of life.1,2

Primary medication nonadherence (PMN) describes patients who do not pick up their first prescription. Between 30-50% of new prescriptions are never filled with lower estimates found in integrated delivery systems.3-5 Subsequently, patients who do not pick up their first medication never pick up their subsequent medications.

Studies have demonstrated a provider’s inaccuracy in reliably detecting medication nonadherence in patients.6-8 However, do these poor predictive skills translate to PMN? The goal of this study is to determine if physician predictions of whether patients would likely pick up their first medication can accurately predict PMN.

RESULTS

A total of 4822 patients taking chronic medications for asthma, diabetes, high cholesterol, or high blood pressure participated in the study.

Figure 1. Included adherent and non-adherent patient populations.

Population

| 4822 patients total | 505 adherent| 507 non-adherent |

Initial

| 4532 adherent | 4532 non-adherent |

Final

| 4032 adherent | 290 non-adherent |

PMN rate: 8.4% PMN

PMN rate: 2.7% PMN

Figure 2. Included adherent and non-adherent patient populations.

PMN: 6.4% PMN

Figure 3. Distribution of medication use by class for both adherent and non-adherent patients.

PMN: 8.3% PMN

Figure 4. Overall Physician Adherence Prediction for Adherent Patients.

PMN: 6.3% PMN

Figure 5. Overall Physician Adherence Prediction for Non-Adherent Patients.

PMN: 3.4% PMN

Discussion

We found that physicians largely expect patients to pick up their first fill of a newly ordered medication subclass based on a sample of 218 physicians who saw the question across 24 separate Geisinger clinics over a period of 10 months.

This expectation is affirmed by the large first fill rate among our sample cohort (94% first fill rate).

The vast majority of patients who physicians felt would be unlikely or very unlikely to pick up their medications, actually did pick up their medications (91.6%).

LIMITATIONS

PMN was only 6%, which is noticeably lower than the rate reported in past studies. Lower baseline PMN rates may lead to more difficulty in providers recognizing patients with PMN.

Generalizability to other settings may be limited due to setting in an integrated delivery system with routine electronic prescribing.

CONCLUSIONS

Providers overwhelmingly believe their patients will pick up their first prescription for a new medication.

Providers intuition on patient’s intention to pick-up a first prescription does not distinguish adherers from non-adherers.

ACKNOWLEDGEMENTS

This study was funded by the National Association of Chain Drug Stores (NACDS) Foundation. We would like to thank, Bernard Klemchuk, PharmD Candidate, Wilkes University, for his assistance in drafting this poster.

REFERENCES


