

## Background

Primary medication non-adherence (PMN) is defined as any instance whereby patients fail to initiate a pharmacotherapy regimen after receiving a prescription for a new therapy. Recent research has shown this to be an area of concern, with rates ranging from 9.8%<sup>1</sup> to as high as 30%<sup>2</sup>, depending on the methodology used. Initial studies using electronic prescriptions to measure PMN for chronic medications found similarly high rates.<sup>3</sup>

The Pharmacy Quality Alliance (PQA) developed a standardized definition for PMN and a quality measure to assess the rates of PMN in pharmacies. The measure only considers medications from a set list of chronic medications that likely warrants a patient needing to pick up the medication in a timely manner to begin therapy. The classes of drugs considered include:

HMG-CoA reductase inhibitors	COPD medications
Direct renin inhibitors	Inhaled corticosteroids
ARBs	DPP-IV inhibitors
ACE-inhibitors	Antiretrovirals
Biguanides	Thiazolidinediones
Sulfonylureas	

The measure is calculated by dividing the number of newly initiated therapies electronically prescribed but not claimed (nor its generic equivalent) within 30 days by all instances whereby a new drug therapy was electronically prescribed. The measure is only considered for patients aged 18 or older for a predefined measurement period.

This study is one of the first to use pharmacy prescription data to calculate PMN using the standardized measure.

## Objectives

- Calculate PMN using the PQA's quality measure with retail pharmacy transaction data
- To identify considerations for appropriate and effective use of the PQA PMN Measure

## Methods

The study was approved by the University of Mississippi IRB. A data use agreement was signed by the University and the pharmacy grocery chain.

De-Identified, pharmacy transactional data for calendar years 2010 and 2011 were collected from 100 pharmacies of a pharmacy grocery chain. The measure was applied to only electronic prescriptions as data captured for the prescription origination date and medication pickup data could not be genuinely well accounted for in prescriptions arriving through other means (e.g., paper prescriptions).

## The PMN Measure

- Single chronic medications and combination products from lists provided by PQA
- Medications were considered new drug therapy if it (or its generic equivalent) had not been filled for the patient by any pharmacy in the chain during the prior 180 days
- Any new drug therapy that occurred through e-prescribing was included in the denominator
- All e-prescribed new drug therapies whereby the patient did not claim the medication, its generic equivalent, or another agent within the same therapeutic class within 30 days of the prescription's origination date were included in the numerator
- The PMN measurement period assessed whether a PMN event occurred for any e-prescribed medication between December 1, 2010 to November 30, 2011

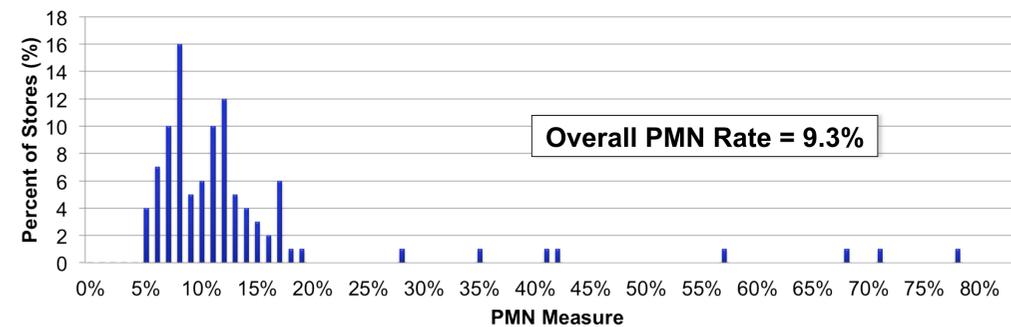


Assumptions that had to be made when working with pharmacy transaction data:

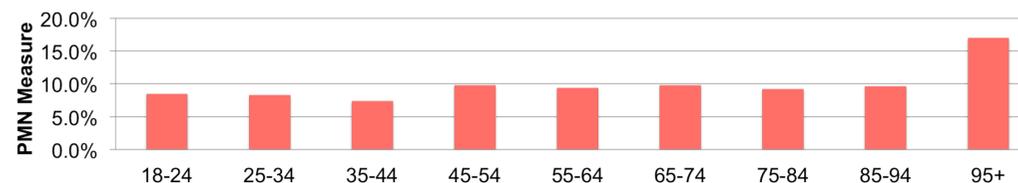
- Patient did not receive medication at another pharmacy
- Patient did not receive enough samples that would keep patient from picking up medication in 30 days
- Patient was not prescribed a medication but was instructed to finish a previous therapy first (by which its supply would last more than 30 days)

## Results

Distribution of PMN Rates Across Stores



PMN by Age Groups



PMN Rates by PQA Medication Group (N=26,472)

PQA Medication Group	Numerator	Denominator	Measure (%)
HMG-CoA reductase inhibitors	808	8,757	9.2
ACE-inhibitors/ ARBs	923	10,760	8.6
Biguanides	278	2,858	9.7
Sulfonylureas	159	1,463	11
Thiazolidinediones	50	359	14
DDP-IV Inhibitors	83	635	13
Antiretrovirals	42	81	52
COPD medications	51	593	8.6
Inhaled corticosteroids	156	1,378	11

## Future Considerations

- The method of how to handle e-prescriptions that have been on hold should be considered further so that the measure can be applied consistently across studies
- Examine what the minimum store e-prescription volume should be for inclusion in the measure
- Consider the exclusion of antiretroviral medications from the measure. The prevalence of these agents is incredibly low and patients who utilize these drug products may behave differently than other patients in the measure (i.e. obtain drugs through HIV programs)

## Conclusions

The study successfully demonstrated that pharmacy transaction data can be used to calculate PMN rates for electronic prescriptions when using PQA's quality measure. Furthermore, the study confirmed what several previous studies had suggested: PMN is an area of concern that prescribers and pharmacists should focus their efforts to improve. Further research is being conducted to identify prescription-level (prescriber and patient) and store characteristics associated with unclaimed electronic prescriptions. Such characteristics might help payers utilize the measure in payment models and to compare pharmacies or plans.

## References

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2. Fischer MA, Stedman MR, Lii J, et al. Primary Medication Non-adherence: Analysis of 195,930 Electronic Prescriptions. *J Gen Intern Med.* 2010; 25(4): 284-290.
3. Shah NR, Hirsch AG, Zacker C, et al. Factors Associated with First-Fill Adherence Rates for Diabetic Medications: A Cohort Study. *J Gen Intern Med.* 2008; 24(2): 233-237.

## Acknowledgements/Disclosures

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