Medication adherence and subsequent year payer medical costs among Medicare Advantage beneficiaries: differences across quality measures

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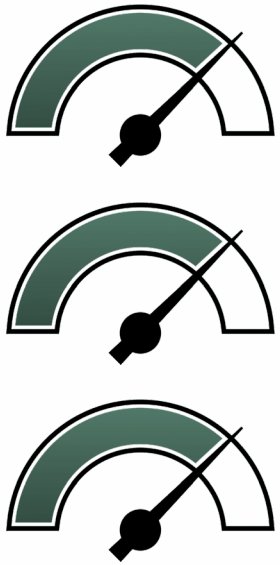
Background

It is estimated that nonadherence represents a $100 to $300 billion burden annually, and nonoptimized medication therapy, inclusive of the impacts of nonadherence, contributes to $500 billion annually[1,2,3]

Pharmacy Quality Alliance



Diabetes All Class (PDC-DR)

Renin Angiotensin System Antagonists (PDC-RASA)

Statins (PDC-STA)

CMS
CENTERS FOR MEDICARE & MEDICAID SERVICES

Medicare Part D Star Ratings

1. Osterberg L, Blaschke T. Adherence to medication. N Engl J Med 2005; 353(5): 487-97.
2. Viswanathan M, Golin CE, Jones CD, et al. Interventions to improve adherence to self-administered medications for chronic diseases in the United States: a systematic review. Ann Intern Med 2012; 157(11): 785-95.3.
3. Watanabe JH, McInnis T, Hirsch JD. Cost of prescription drug-related morbidity and mortality. Ann Pharmacother 2018; 52(9): 829-37.

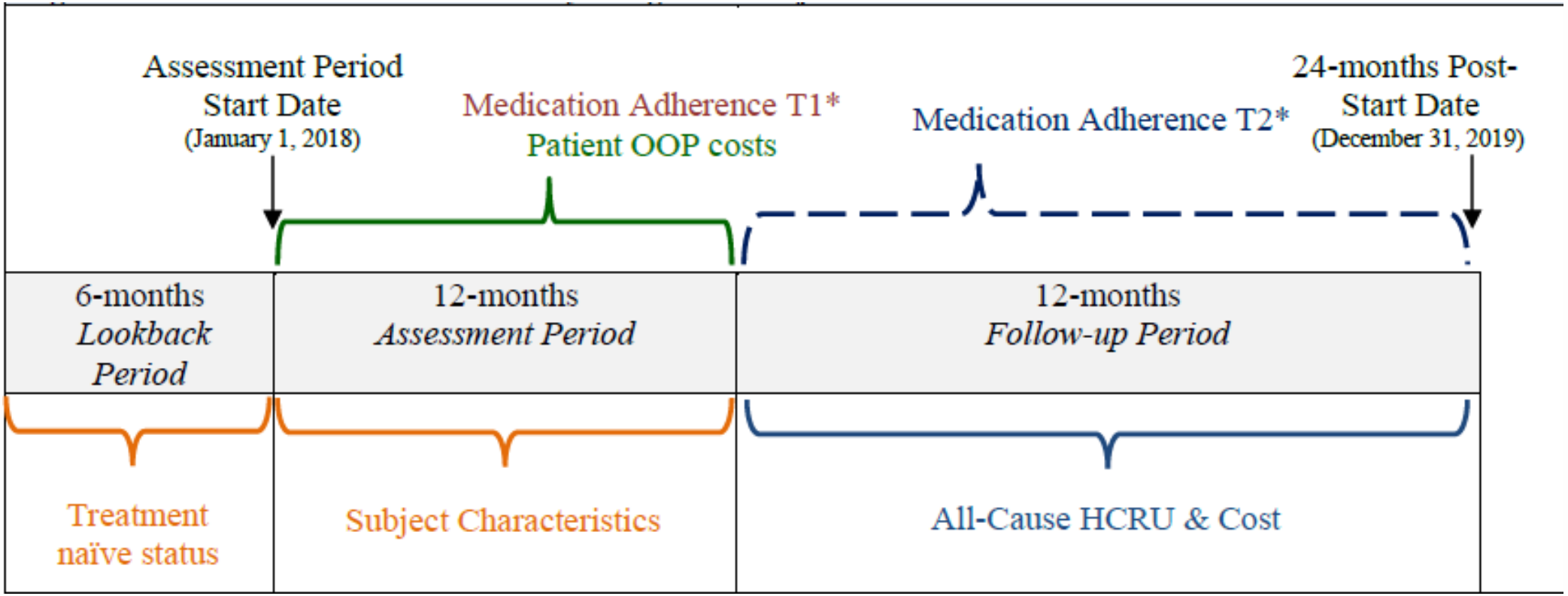
Objectives

- ✓ Assess economic outcomes associated with three medication adherence quality measures among beneficiaries enrolled in Medicare Advantage (MA)
- ✓ Estimate differences in the relationships between medication adherence and healthcare expenditures across three adherence measures

Methods

Study Design

This retrospective cohort used data from the Optum Clinformatics Data Mart (CDM)



Study Population

Inclusion

- Aged 18+ years on index prescription start date
- 18-month continuous enrollment
- 2+ prescriptions dispensed in the 12-month assessment period

Exclusion

- End-stage renal disease (ESRD), hospice use, death
- Diabetes measure exclusion: use of insulin products
- RASA measure exclusion: use of sacubitril/valsartan

4 cohorts were formed

Diabetes measure only

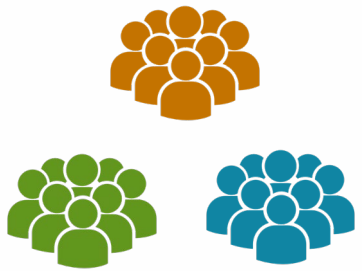
RASA measure only

Statin measure only

Inclusion in all three measures

Inclusion and exclusion criteria were based on PQA adherence measure specifications.

Statistical Analysis



Generalized Linear Models were used to assess relationships between PDC and payer and patient OOP medical costs

- Interaction terms were used to assess differences in this relationship between quality measures

GEE coefficient contrasts were utilized to assess differences in the relationships between PDC and payer and patient OOP medical costs

Patient medical OOP costs were calculated as the sum of co-pays, deductibles, and coinsurance. Payer medical costs were estimated as total allowable charges minus patient OOP costs

Results

Study population

Single measure groups
N = 962,480

All three measures
N = 272,317

	Diabetes Measure Only		RASA Measure Only		Statin Measure Only		Inclusion in All 3 Measures	
	N	(%)	N	(%)	N	(%)	N	(%)
Race/Ethnicity								
Non-Hispanic White	27783	59.0	293188	66.1	361887	70.9	27783	59.0
Non-Hispanic Black	7593	16.1	61279	13.8	54941	10.8	7593	16.1
Non-Hispanic Asian	2089	4.4	13591	3.1	17923	3.5	2089	4.4
Hispanic	7348	15.6	54021	12.2	50744	9.9	7348	15.6
Sex – Male	19988	42.4	161017	36.3	207052	40.6	133821	47.1
LIS/DE Status	11754	25.0	88412	19.9	96424	18.9	67829	23.9

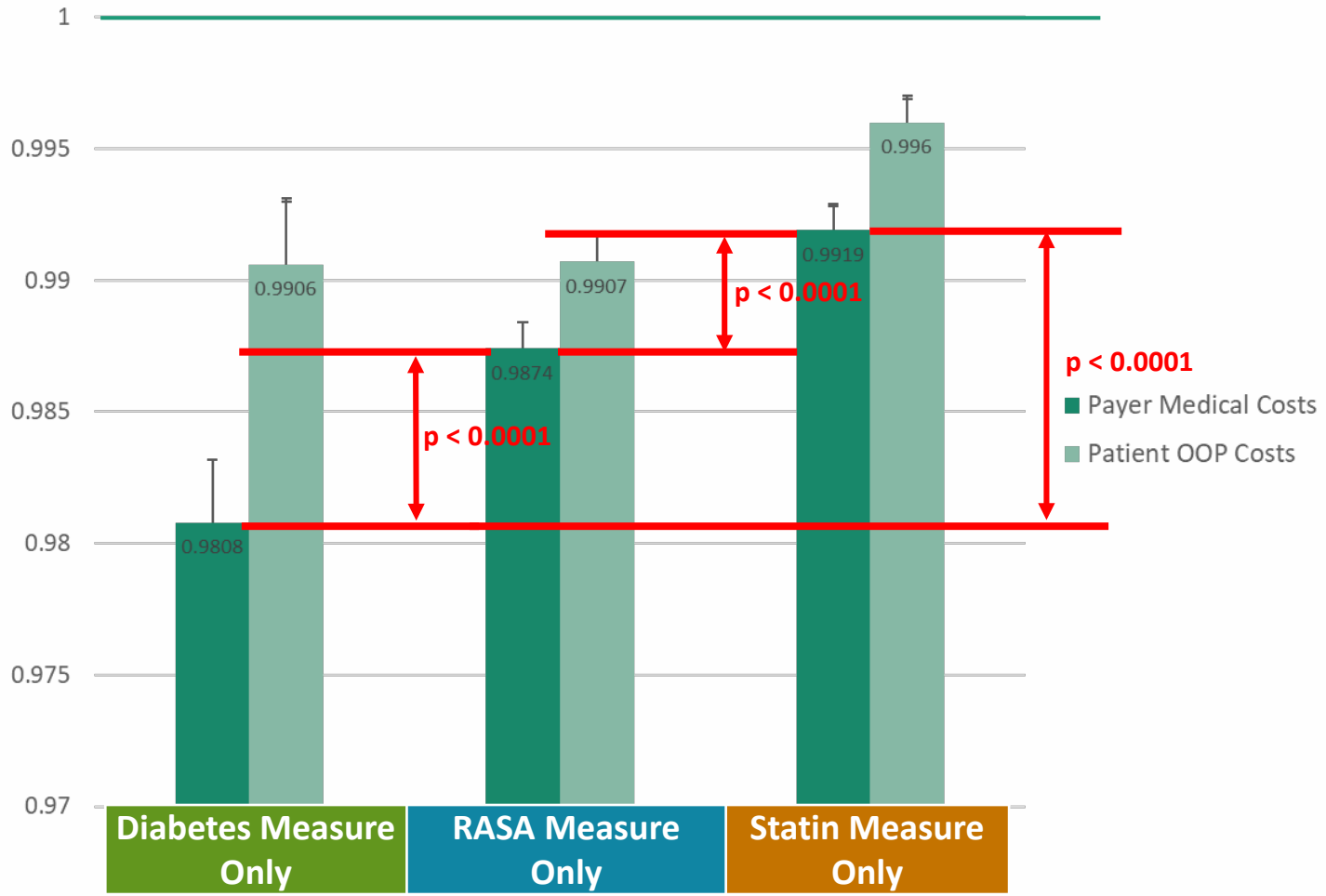
LIS/DE: low-income subsidy / dual eligibility

Study population

	Diabetes Measure Only	RASA Measure Only	Statins Measure Only	Inclusion in All 3 Measures
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Age	72.07 (9.86)	74.01 (8.66)	73.89 (8.19)	72.90 (7.46)
DCCI	3.41 (2.62)	1.93 (2.30)	2.10 (2.48)	3.74 (2.49)
Medication burden	7.43 (4.45)	6.18 (4.03)	6.53 (4.30)	9.81 (4.18)
RASA PDC	N/A	0.89 (0.16)	N/A	0.92 (0.13)
Statins PDC	N/A	N/A	0.89 (0.16)	0.90 (0.14)
Diabetes PDC	0.84 (0.20)	N/A	N/A	0.92 (0.14)
Patient OOP Medical Costs	380.61 (54.21 – 1083.30)	334.87 (40.00-952.99)	386.45 (65.14-1029.50)	317.36 (40.00-868.38)
Payer Medical Costs	6,397.50 (2,011.90-20,216.00)	5,595.50 (1,811.60-17,604.00)	6,106.20 (2,148.90-18,283.00)	5,385.40 (1,962.70-15,561.00)

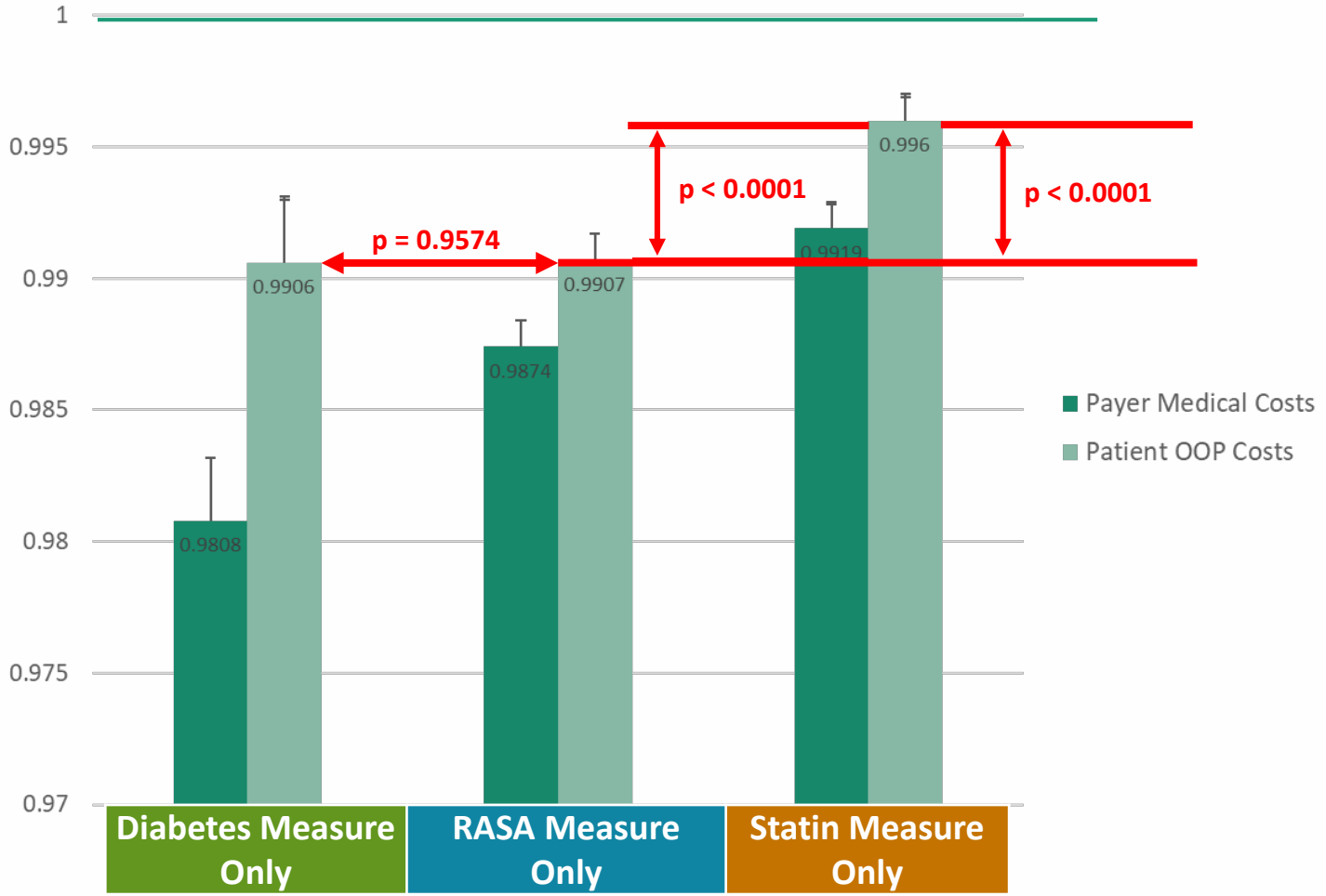
DCCI: Deyo-Charlson comorbidity index; PDC: proportion of days covered; OOP: out of pocket
Medication burden defined as the number of chronic medications (≥28 days supply) dispensed during the year

Model results for single measure cohorts



Note: PDC was scaled in terms of 5% increments; Charts present adjusted coefficient for the medication adherence term
Models adjusted for age, sex, and race (non-Hispanic White, non-Hispanic Black, non-Hispanic Asian, Hispanic and Other), geographic regions, Low Income Subsidy status, insurance plan type, medication burden, Deyo-Charlson Comorbidity Index, treatment naïve status, mail-order pharmacy use, and 90-day prescription fill use

Model results for single measure cohorts



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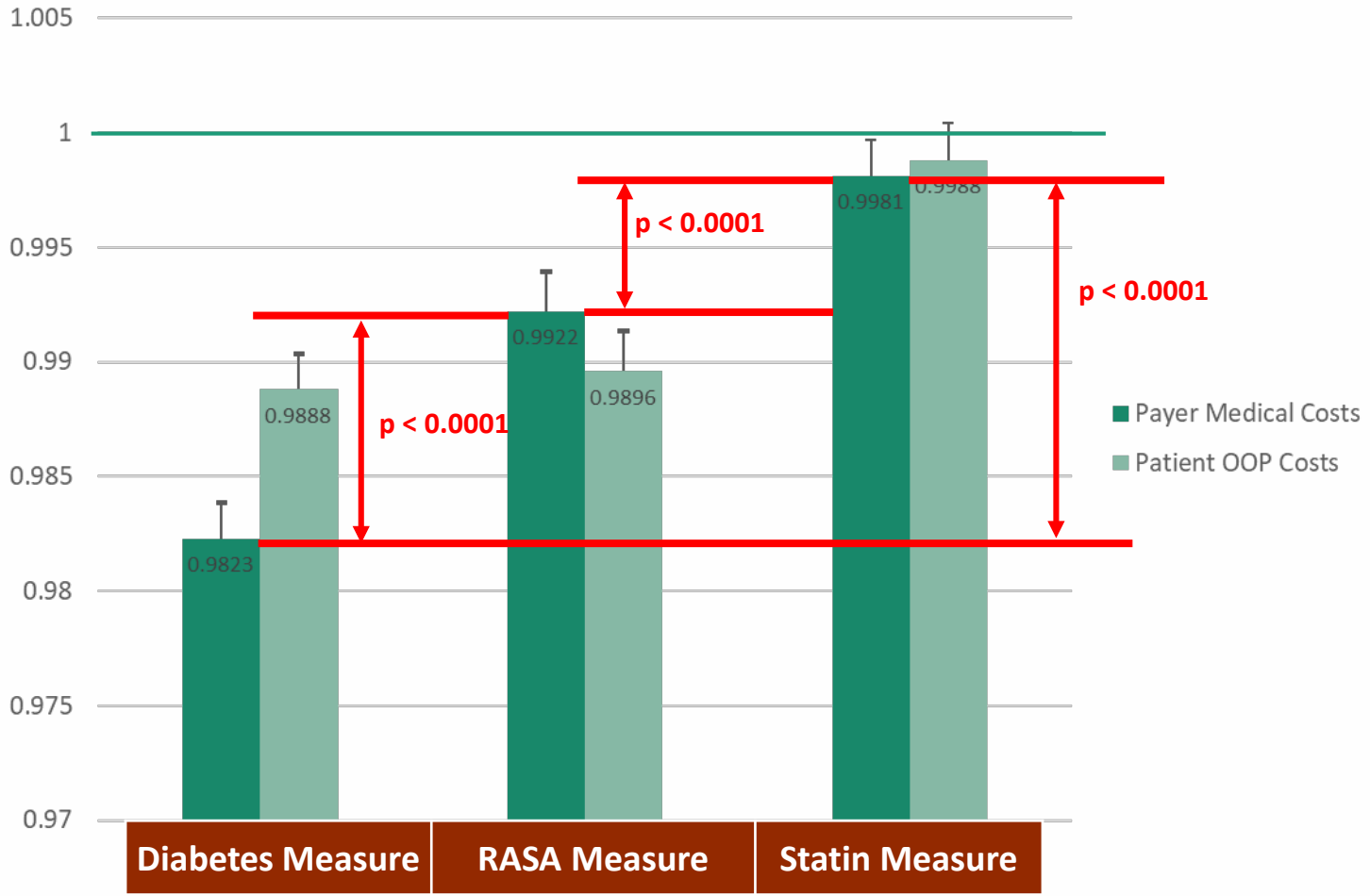
Model results for the multiple measure cohort



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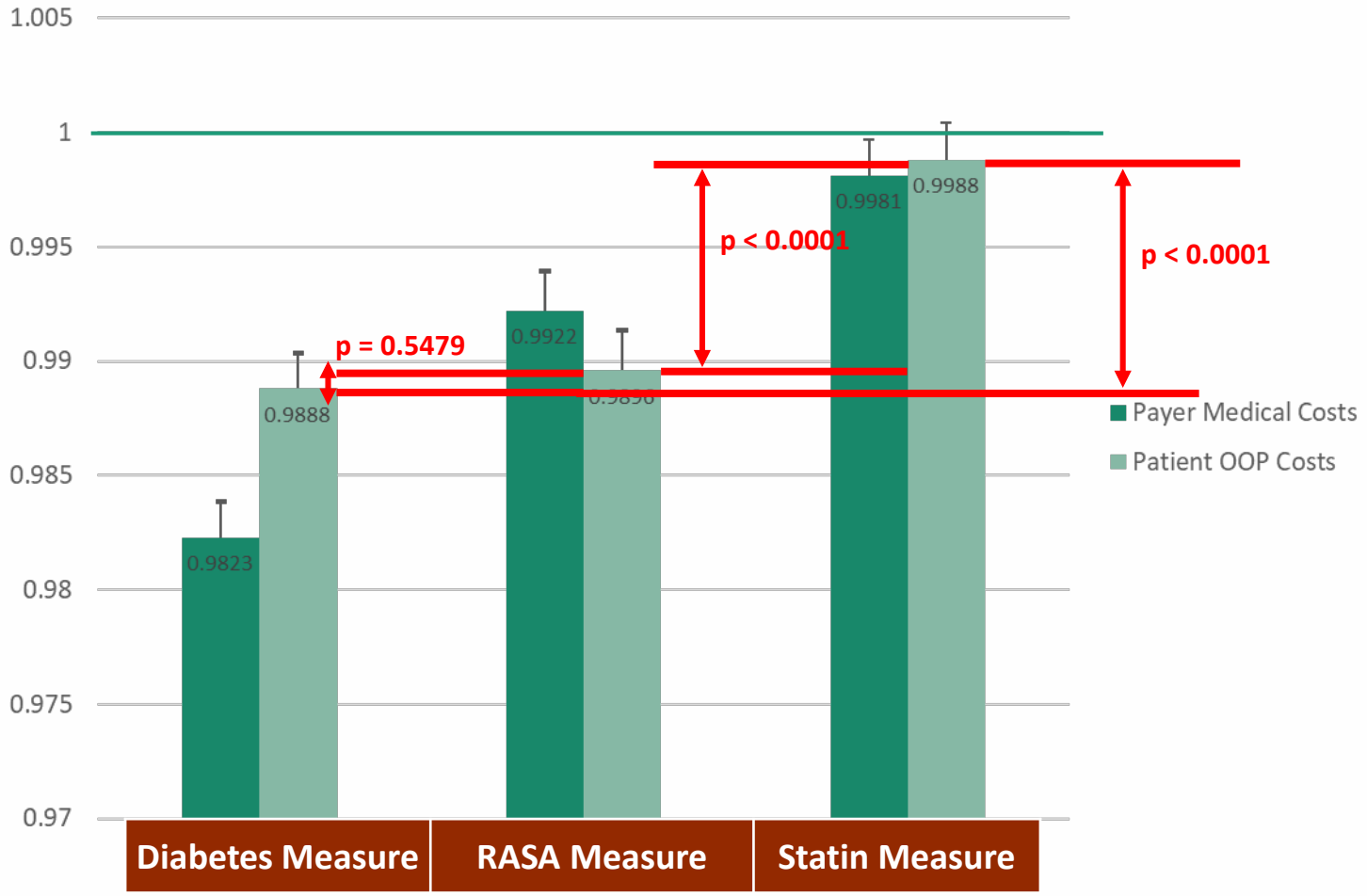
Model results for the multiple measure cohort



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Discussion

Decades of prior research confirm that increases in medication adherence can help reduce payer and patient burden of medical costs

The relationship between medication adherence and future medical costs is strongest for oral antidiabetics compared to RASA or statin medications

This finding is also consistent among individuals using all three medication classes

Limitations

Prescription claims data are an indirect measure of medication-taking behavior, and the presence of a prescription claim does not indicate the medication was actually taken

Since CDM data are health insurance claims data collected primarily for administrative purposes, billing and coding errors and omissions cannot be ruled out

Medicare Advantage plans have unique benefit designs that may limit generalizability of the findings

Thank You!

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