Factors Influencing Prescription Drug Trend within Medicare

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(ARS Response Card: Channel 41)

Disclosure

"I, Sharon Frazee and Michael Looney, are employees of Express Scripts, Inc. which provides Medicare drug benefit management services. The research presented herein was funded solely by Express Scripts, Inc."

Learning Objectives

- Analyze pharmacy cost and utilization trends in a Medicare population compared to those in a commercially insured population

- Identify the physician characteristics associated with a higher Generic Fill Rate

Express Scripts Research 25 Year Proven History

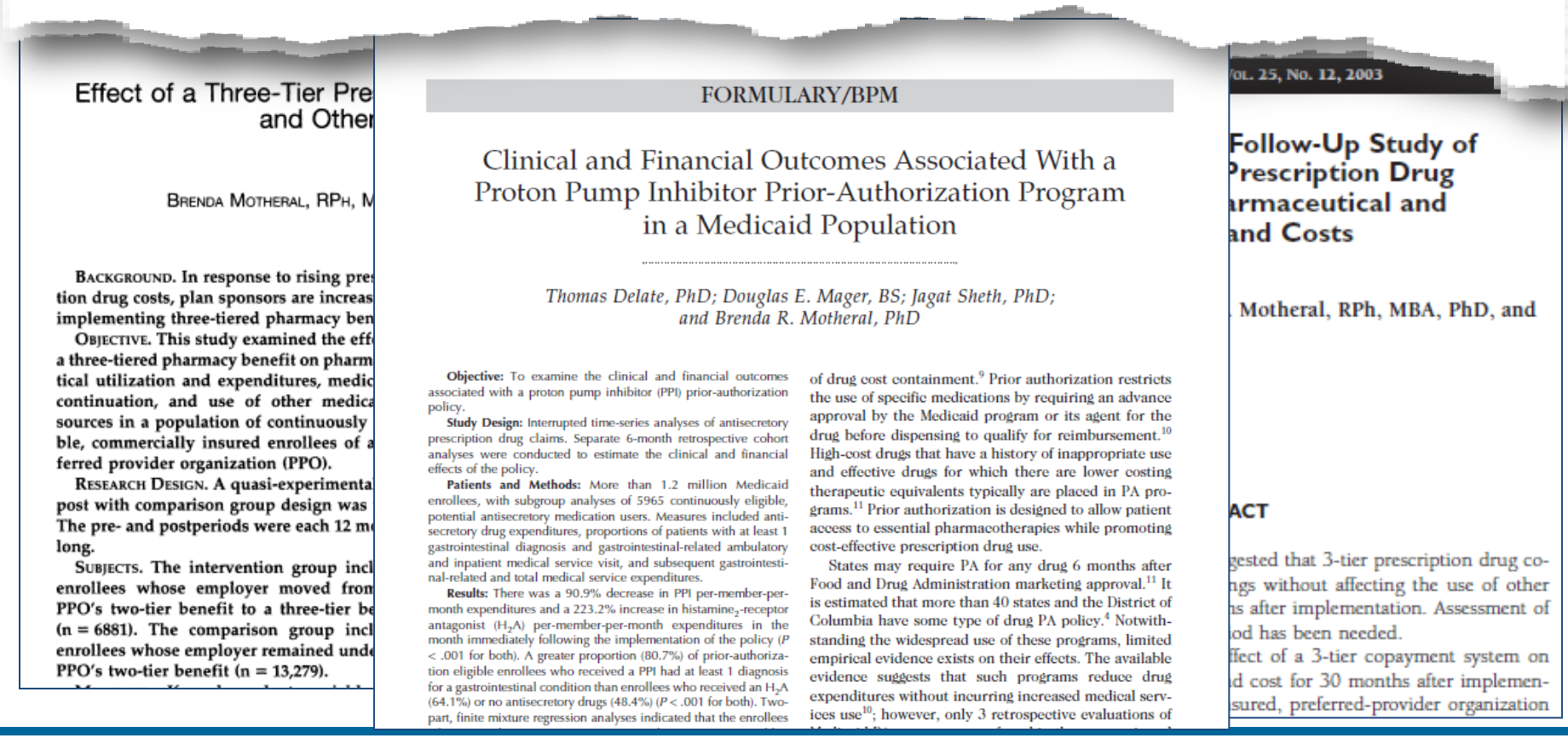
- First Drug Trend Report
- Annual Outcomes Conference
- Over 70 Peer-Reviewed Articles

http://www.express-scripts.com/research/research/

- Award-Winning Research

Challenging Intuition with Science

"Implementation of 3-tier copayments **will lead to increased medical costs**."



Effect of a Three-Tier Pre
and Other

BRENDA MOTHERAL, RPH, M

BACKGROUND. In response to rising pres
tion drug costs, plan sponsors are increas
implementing three-tiered pharmacy ben
OBJECTIVE. This study examined the eff
a three-tiered pharmacy benefit on pharm
tical utilization and expenditures, medic
continuation, and use of other medica
sources in a population of continuously
ble, commercially insured enrollees of a
ferred provider organization (PPO).
RESEARCH DESIGN. A quasi-experimenta
post with comparison group design was
The pre- and postperiods were each 12 m
long.
SUBJECTS. The intervention group incl
enrollees whose employer moved from
PPO's two-tier benefit to a three-tier be
(n = 6881). The comparison group incl
enrollees whose employer remained unde
PPO's two-tier benefit (n = 13,279).

FORMULARY/BPM

Clinical and Financial Outcomes Associated With a Proton Pump Inhibitor Prior-Authorization Program in a Medicaid Population

Thomas Delate, PhD; Douglas E. Mager, BS; Jagat Sheth, PhD; and Brenda R. Motheral, PhD

Objective: To examine the clinical and financial outcomes associated with a proton pump inhibitor (PPI) prior-authorization policy.

Study Design: Interrupted time-series analyses of antisecretory prescription drug claims. Separate 6-month retrospective cohort analyses were conducted to estimate the clinical and financial effects of the policy.

Patients and Methods: More than 1.2 million Medicaid enrollees, with subgroup analyses of 5965 continuously eligible, potential antisecretory medication users. Measures included antisecretory drug expenditures, proportions of patients with at least 1 gastrointestinal diagnosis and gastrointestinal-related ambulatory and inpatient medical service visit, and subsequent gastrointestinal-related and total medical service expenditures.

Results: There was a 90.9% decrease in PPI per-member-per-month expenditures and a 223.2% increase in histamine$_2$-receptor antagonist (H_2A) per-member-per-month expenditures in the month immediately following the implementation of the policy ($P < .001$ for both). A greater proportion (80.7%) of prior-authorization eligible enrollees who received a PPI had at least 1 diagnosis for a gastrointestinal condition than enrollees who received an H_2A (64.1%) or no antisecretory drugs (48.4%) ($P < .001$ for both). Two-part, finite mixture regression analyses indicated that the enrollees

of drug cost containment.[9] Prior authorization restricts the use of specific medications by requiring an advance approval by the Medicaid program or its agent for the drug before dispensing to qualify for reimbursement.[10] High-cost drugs that have a history of inappropriate use and effective drugs for which there are lower costing therapeutic equivalents typically are placed in PA programs.[11] Prior authorization is designed to allow patient access to essential pharmacotherapies while promoting cost-effective prescription drug use.

States may require PA for any drug 6 months after Food and Drug Administration marketing approval.[11] It is estimated that more than 40 states and the District of Columbia have some type of drug PA policy.[4] Notwithstanding the widespread use of these programs, limited empirical evidence exists on their effects. The available evidence suggests that such programs reduce drug expenditures without incurring increased medical services use[10]; however, only 3 retrospective evaluations of

OL. 25, No. 12, 2003

Follow-Up Study of
Prescription Drug
rmaceutical and
and Costs

Motheral, RPh, MBA, PhD, and

ACT

gested that 3-tier prescription drug co-
ngs without affecting the use of other
s after implementation. Assessment of
od has been needed.
ffect of a 3-tier copayment system on
d cost for 30 months after implemen-
sured, preferred-provider organization

Background

- Nationwide there are over 47 million (and growing) Medicare beneficiaries[1]
- 29 million Medicare beneficiaries enrolled in Part D[2]
- Prescription medications represent 12% of Medicare spending
- January 2011 – first of the Baby Boomers turned age 65
- Express Scripts manages benefits for over 2 million Medicare beneficiaries (57% MADP, 28% PDP, 15% Other (EGWP, Secondary to Part D and PACE)

[1] Kaiser Family Foundation: State Health Facts 2011 http://www.statehealthfacts.org/comparemaptable.jsp?yr=200&typ=1&ind=290&cat=6&sub=74&sortc=1&o=a
[2] Kaiser Family Foundation: The Medicare Prescription Drug Benefit November 2011. Available at http://www.kff.org/medicare/upload/7044-12.pdf

Express Scripts Medicare Trend: 2010 - 2011

Therapy Class	Utilization Trend	Cost Trend	Total Trend
Diabetes	5.0%	5.4%	10.7%
High Blood Pressure	2.9%	-15.4%	-12.9%
High Cholesterol	4.4%	-0.2%	4.2%

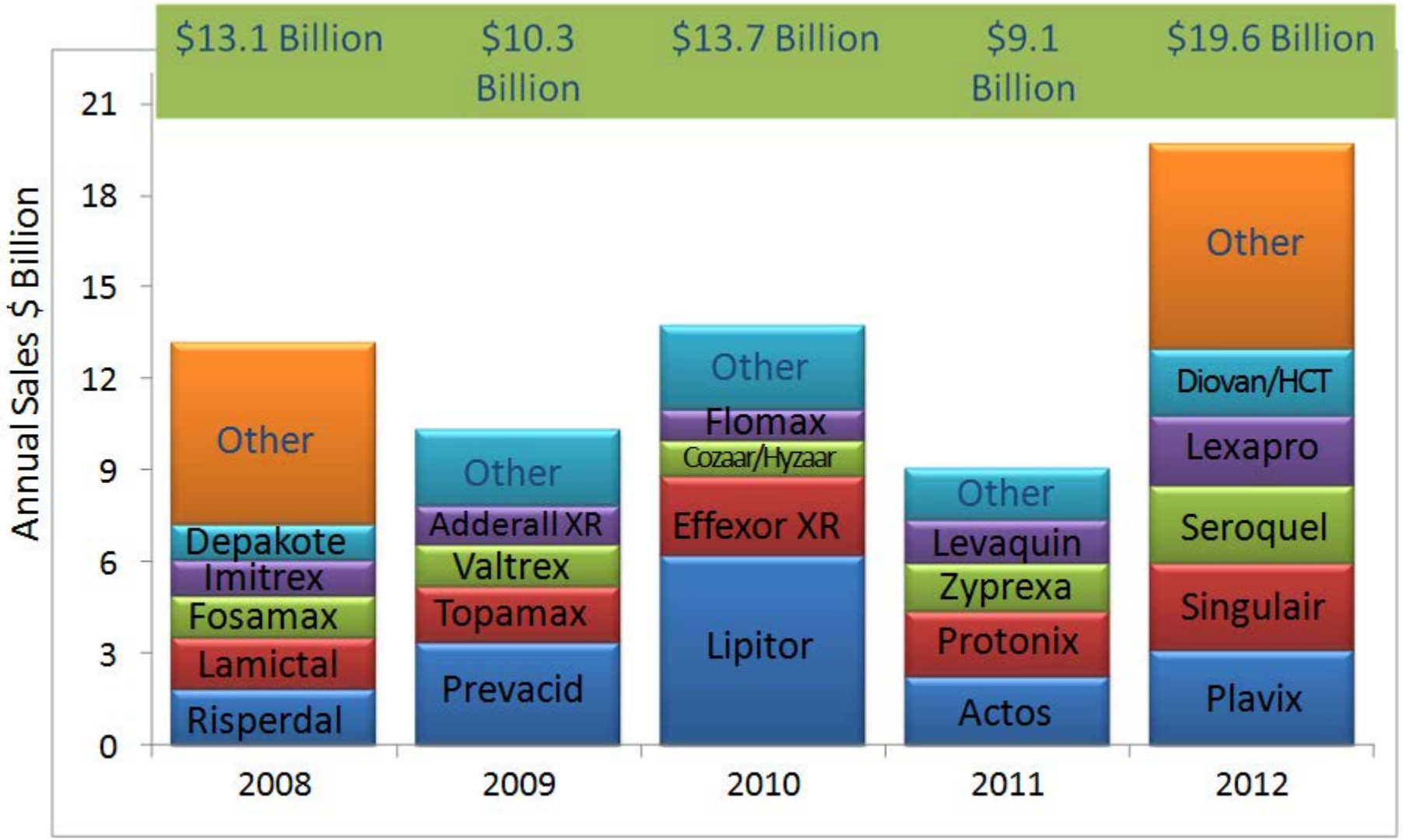
Medicare Trend vs. Commercial Trend - Traditional

Therapy Class	Medicare Trend			Commercial Trend		
	Utilization	Cost	Total	Utilization	Cost	Total
Diabetes	5.0%	5.4%	**10.7%**	-0.6%	7.5%	**7.0%**
High Blood Pressure	2.9%	-15.4%	**-12.9%**	-0.6%	-9.0%	**-9.5%**
High Cholesterol	4.4%	-0.2%	**4.2%**	-1.6%	4.1%	**2.5%**

Medicare Cost trend is lower than Commercial Cost Trend

Generic medications played a key role

Generic Pipeline: More Than $65 Billion Over Five Years



Cost Differential – Brand vs. Generic

Therapy Class	Brand vs. Generic Average Cost/Rx Differential	GFR
Diabetes	$95.65	47%
High Blood Pressure	$85.17	91%
High Cholesterol	$113.51	76%
All Drugs	$117.57	79%

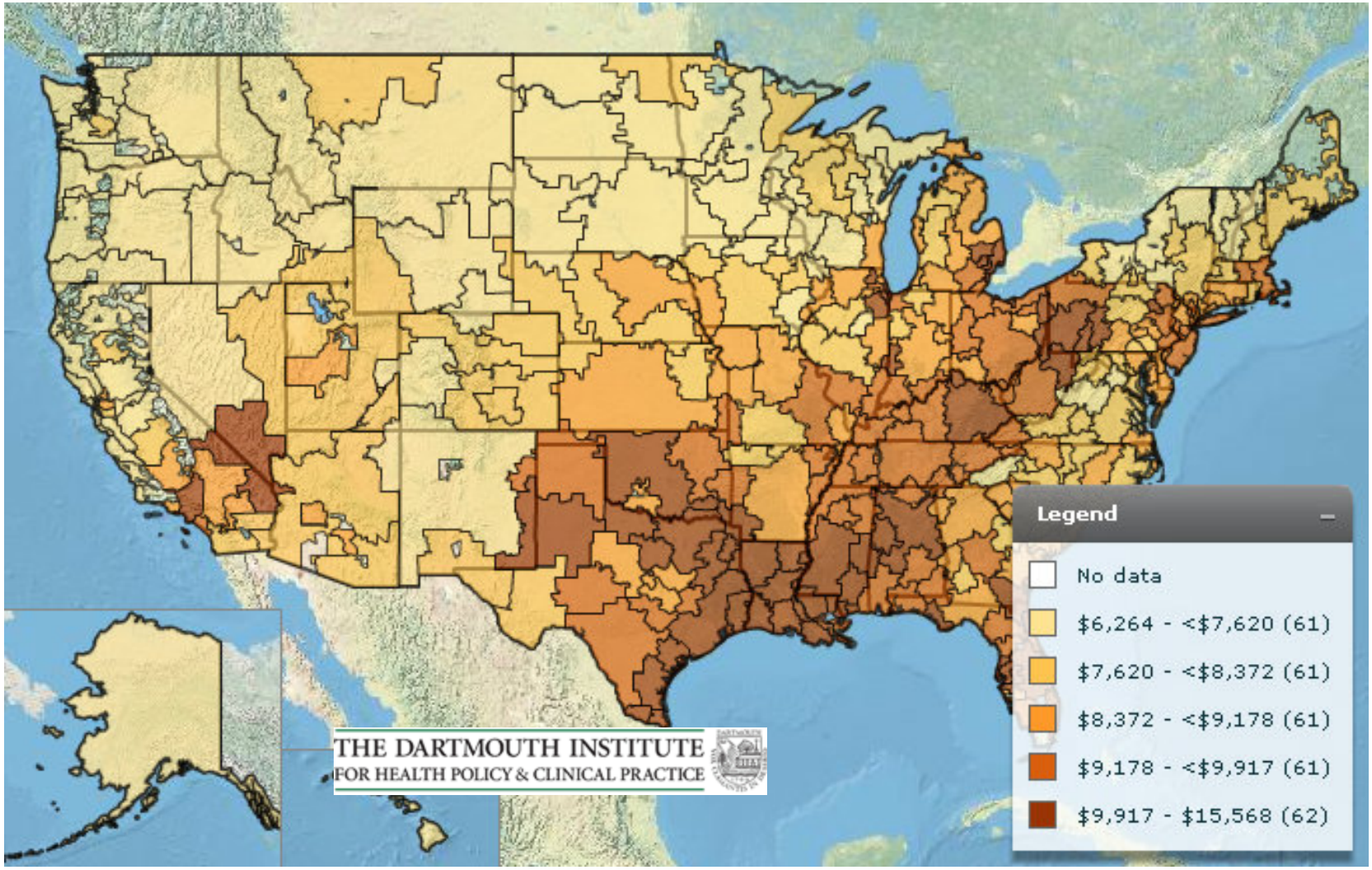
Top 10 Traditional Medications Ranked by PMPY Cost 2011

Drug	Therapy Class
PLAVIX	BLOOD MODIFYING
ADVAIR DISKUS	ASTHMA
LIPITOR	HIGH BLOOD CHOLESTEROL
SEROQUEL	MENTAL/NEURO DISORDERS
CRESTOR	HIGH BLOOD CHOLESTEROL
ACTOS	DIABETES
SPIRIVA	COPD
OMEPRAZOLE	ULCER DISEASE
JANUVIA	DIABETES
SIMVASTATIN	HIGH BLOOD CHOLESTEROL

Top Medications by Disease Category: Ranked by PMPY Utilization - 2011

Diabetes	High Blood Pressure	High Blood Cholesterol
METFORMIN	LISINOPRIL	SIMVASTATIN
GLIPIZIDE	AMLODIPINE	LOVASTATIN
GLIMEPIRIDE	ATENOLOL	PRAVASTATIN
ONE TOUCH ULTRA TEST STRIPS	METOPROLOL TARTRATE	LIPITOR
GLYBURIDE	ENALAPRIL	CRESTOR

Geographic Variation



Source: http://www.dartmouthatlas.org/

Question

What influence do prescriber geographic and demographic characteristics have on **generic prescribing patterns**?

Methodology

Research Question	What observable characteristics impact prescriber generic fill rate?
Sample	▪ Express Scripts Internal Data ▪ Patients with at least 1 claim for Rx for diabetes, hypertension, dyslipidemia ▪ Prescriber criteria: Age 23-80; >=30 Rx claims in U.S.; legally authorized to prescribe in U.S.
Methods	▪ Dependent variable: 30 day adjusted disease specific prescriber generic fill rate ▪ Adherence was measured using the medication possession ratio (MPR) ▪ Prescriber geographic info matched on 3 digit zip census info ▪ Multivariate Least Squares regression

Results

National Sample	▪ Hypertension = 139,093 prescribers ▪ Lipids = 94,057 prescribers ▪ Diabetes = 50,605 prescribers
Key Factors	▪ Age ▪ Gender ▪ Medicare Penetration ▪ Physician Household Income ▪ Census Region ▪ Prescriber Specialty

ANTIHYPERTENSION MODEL

Hypertension
Prescriber GFR, Multivariate Least Squares Regression

Variable	Coefficient	SE	p-value
Age 21-34	Reference Category		
Age 35-44	-1.56	0.18	<.0001
Age 45-54	-2.04	0.18	<.0001
Age 55-64	-2.27	0.18	<.0001
Age 65+	-3.15	0.21	<.0001
Female	0.53	0.08	<.0001
Rural	1.61	0.09	<.0001

Hypertension – Cont'd
Prescriber GFR, Multivariate Least Squares Regression

Variable	Coefficient	SE	p-value
Medicare Patients Seen: 0% (Commercial Only)	Reference Category		
0% < Pct. Of Patients in Medicare <=20%	-0.25	0.08	0.002
20% < Pct. Of Patients in Medicare <=40%	1.78	0.13	<.0001
40% < Pct. Of Patients in Medicare <=60%	3.08	0.15	<.0001
60% < Pct. Of Patients in Medicare <=80%	4.23	0.17	<.0001
80% < Pct. Of Patients in Medicare <=100%	6.16	0.18	<.0001

Hypertension – Cont'd
Prescriber GFR, Multivariate Least Squares Regression

Variable	Coefficient	SE	p-value
Average Household Income Less Than or Equal to $20,000	Reference Category		
Average Household Income Between $20,000 and $40,000	-1.67	0.23	<.0001
Average Household Income Between $40,000 and $60,000	-2.52	0.23	<.0001
Average Household Income Between $60,000 and $80,000	-4.03	0.24	<.0001
Average Household Income Become $80,000 and $100,000	-5.44	0.28	<.0001
Average Household Income Greater than $100,000	-6.55	0.38	<.0001

Hypertension – Cont'd
Prescriber GFR, Multivariate Least Squares Regression

Variable	Coefficient	SE	p-value
East North Central (IN, IL, MI, OH, WI)	Reference Category		
New England (CT, ME, MA, NH, RI, VT)	1.78	0.14	<.0001
Mid Atlantic (NY, NJ, PA)	-6.73	0.12	<.0001
West North Central (IA, KS,MN, MO, NE, ND, SD)	0.41	0.15	0.0048
South Atlantic (DE, DC, FL, GA, MD, NC, SC, VA, WV)	-3.83	0.11	<.0001
East South Central (AL, KY, MS, TN)	-2.60	0.15	<.0001
West South Central (AR, LA, OK, TX)	-6.42	0.14	<.0001
Mountain (AZ, CO, ID, NM, MT, UT, NV, WY)	-0.75	0.16	<.0001
Pacific (AK, CA, HI, OR, WA)	-3.40	0.13	<.0001

Hypertension – Cont'd
Prescriber GFR, Multivariate Least Squares Regression

Variable	Coefficient	SE	p-value
Internal Medicine	Reference Category		
Nurse Practitioners	1.26	0.15	<.0001
Physician Assistant	0.67	0.18	0.0002
Family Doctor	1.47	0.089	<.0001
Geriatric	2.36	0.19	<.0001
Specialist	1.54	0.09	<.0001
ER Physician	0.82	0.19	<.0001

ANTIHYPERLIPIDEMIA MODEL

Hyperlipidemia
Prescriber GFR, Multivariate Least Squares Regression

Variable	Coefficient	SE	p-value
Age 21-34	Reference Category		
Age 35-44	-1.67	0.37	<.0001
Age 45-54	-2.15	0.37	<.0001
Age 55-64	-2.45	0.37	<.0001
Age 65+	-3.64	0.43	<.0001
Female	2.02	0.15	<.0001
Rural	1.96	0.19	<.0001

Hyperlipidemia – Cont'd
Prescriber GFR, Multivariate Least Squares Regression

Variable	Coefficient	SE	p-value
Medicare Patients Seen: 0% (Commercial Only)	Reference Category		
0% < Pct. Of Patients in Medicare <=20%	0.81	0.16	<.0001
20% < Pct. Of Patients in Medicare <=40%	6.06	0.24	<.0001
40% < Pct. Of Patients in Medicare <=60%	10.54	0.28	<.0001
60% < Pct. Of Patients in Medicare <=80%	15.61	0.32	<.0001
80% < Pct. Of Patients in Medicare <=100%	19.94	0.35	<.0001

Hyperlipidemia – Cont'd
Prescriber GFR, Multivariate Least Squares Regression

Variable	Coefficient	SE	p-value
Average Household Income Less Than or Equal to $20,000	Reference Category		
Average Household Income Between $20,000 and $40,000	-0.06	0.48	0.9063
Average Household Income Between $40,000 and $60,000	-1.58	0.48	0.001
Average Household Income Between $60,000 and $80,000	-4.03	0.50	<.0001
Average Household Income Become $80,000 and $100,000	-5.91	0.56	<.0001
Average Household Income Greater than $100,000	-6.99	0.73	<.0001

Hyperlipidemia – Cont'd
Prescriber GFR, Multivariate Least Squares Regression

Variable	Coefficient	SE	p-value
East North Central (IN, IL, MI, OH, WI)	Reference Category		
New England (CT, ME, MA, NH, RI, VT)	11.66	0.27	<.0001
Mid Atlantic (NY, NJ, PA)	-10.29	0.23	<.0001
West North Central (IA, KS,MN, MO, NE, ND, SD)	2.07	0.28	<.0001
South Atlantic (DE, DC, FL, GA, MD, NC, SC, VA, WV)	-4.34	0.22	<.0001
East South Central (AL, KY, MS, TN)	-1.19	0.30	<.0001
West South Central (AR, LA, OK, TX)	-6.31	0.27	<.0001
Mountain (AZ, CO, ID, NM, MT, UT, NV, WY)	2.89	0.31	<.0001
Pacific (AK, CA, HI, OR, WA)	0.52	0.26	0.0456

Hyperlipidemia – Cont'd
Prescriber GFR, Multivariate Least Squares Regression

Variable	Coefficient	SE	p-value
Internal Medicine	Reference Category		
Nurse Practitioners	-1.59	0.33	<.0001
Physician Assistant	-1.47	0.39	0.0002
Family Doctor	1.60	0.16	<.0001
Geriatric	2.33	0.35	<.0001
Specialist	-7.85	0.18	<.0001
ER Physician	0.81	0.35	0.023

DIABETES MODEL

Diabetes
Prescriber GFR, Multivariate Least Squares Regression

Variable	Coefficient	SE	p-value
Age 21-34	Reference Category		
Age 35-44	-1.16	0.45	0.0102
Age 45-54	-1.05	0.45	0.0197
Age 55-64	-0.68	0.46	0.1396
Age 65+	-0.53	0.53	0.3123
Female	2.49	0.18	<.0001
Rural	1.47	0.22	<.0001

Diabetes – Cont'd
Prescriber GFR, Multivariate Least Squares Regression

Variable	Coefficient	SE	p-value
Medicare Patients Seen: 0% (Commercial Only)	Reference Category		
0% < Pct. Of Patients in Medicare <=20%	0.20	0.22	0.3664
20% < Pct. Of Patients in Medicare <=40%	3.32	0.29	<.0001
40% < Pct. Of Patients in Medicare <=60%	5.57	0.33	<.0001
60% < Pct. Of Patients in Medicare <=80%	6.87	0.34	<.0001
80% < Pct. Of Patients in Medicare <=100%	7.84	0.37	<.0001

Diabetes – Cont'd
Prescriber GFR, Multivariate Least Squares Regression

Variable	Coefficient	SE	p-value
Average Household Income Less Than or Equal to $20,000	Reference Category		
Average Household Income Between $20,000 and $40,000	-1.78	0.55	0.0012
Average Household Income Between $40,000 and $60,000	-2.33	0.55	<.0001
Average Household Income Between $60,000 and $80,000	-3.79	0.58	<.0001
Average Household Income Become $80,000 and $100,000	-4.18	0.69	<.0001
Average Household Income Greater than $100,000	-4.89	0.97	<.0001

Diabetes – Cont'd
Prescriber GFR, Multivariate Least Squares Regression

Variable	Coefficient	SE	p-value
East North Central (IN, IL, MI, OH, WI)	Reference Category		
New England (CT, ME, MA, NH, RI, VT)	8.19	0.32	<.0001
Mid Atlantic (NY, NJ, PA)	-5.02	0.27	<.0001
West North Central (IA, KS,MN, MO, NE, ND, SD)	4.65	0.33	<.0001
South Atlantic (DE, DC, FL, GA, MD, NC, SC, VA, WV)	-1.82	0.27	<.0001
East South Central (AL, KY, MS, TN)	0.32	0.35	0.3602
West South Central (AR, LA, OK, TX)	-1.60	0.31	<.0001
Mountain (AZ, CO, ID, NM, MT, UT, NV, WY)	3.25	0.39	<.0001
Pacific (AK, CA, HI, OR, WA)	0.51	0.32	0.1089

Diabetes – Cont'd
Prescriber GFR, Multivariate Least Squares Regression

Variable	Coefficient	SE	p-value
Internal Medicine	Reference Category		
Nurse Practitioners	-1.41	0.41	0.0006
Physician Assistant	-1.28	0.51	0.0122
Family Doctor	-0.39	0.19	0.0383
Geriatric	1.41	0.41	0.0006
Specialist	-3.48	0.23	<.0001
ER Physician	-0.05	0.40	0.9103

Model Results – Summary

	Medicare Penetration	Income	Geography	Urban / Rural
Hypertension	GFR highest when 80% <	GFR lowest at income over $100k	GFR highest in New England; lowest in Mid Atlantic	GFR higher in rural
Lipids	GFR highest when 80% <	GFR lowest at income over $100k	GFR highest in New England; lowest in Mid Atlantic	GFR higher in rural
Diabetes	GFR highest when 80% <	GFR lowest at income over $100k	GFR highest in New England; lowest in Mid Atlantic	GFR higher in rural

Conclusions

- Higher Generic Fill Rate for prescribers who have a high concentration of Medicare Patients
- Lower GFR in NY, NJ, PA relative to the rest of the country; higher in New England
- Higher income areas have a lower GFR
- Rural areas have about a 1-2 point lift in GFR relative to urban areas
- Specialists who prescribe diabetes and lipid medications have a lower generic fill rate.

Assessments

Assessment Question 1

Which of the following have been most useful in managing Medicare prescription drug trends?

Cost sharing

Formulary management

Generic medications

Physician prescribing

Assessment Question 2

Which of the following are physician characteristics **not** associated with better Generic Fill Rate?

Physician Gender

Physician Region

Concentration of Medicare Patients

All are associated

Questions?

Contact Information

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Presentation Evaluation

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