The Impact of Provider Payments on Health Care Utilization of Low-Income Individuals: Evidence from Medicare and Medicaid

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Motivation

Universal health insurance exists in the US if aged 65+ or with disabilities

But, there is a strong income disparity in **access to care** in Medicare

- Low-income less likely to have any office visit

- ...despite higher rates of chronic disease and lower cost-sharing

We examine the role of lower **provider payment** in this income disparity

The Two Tiers of Medicare

Health insurance for elderly and disabled in the US across the income spectrum

- High income covered by Medicare alone
    - Cost-sharing is large and uncapped (e.g., 20% of physician services)

- Low income covered by Medicare and Medicaid ("dual-eligibles" or "duals")
    - Physicians cannot collect cost-sharing from duals
    - Medicaid programs only partially and occasionally pay cost-sharing

- Thus, physicians get paid less to provide services for duals than for nonduals
    - Reductions in supplier payment are a common cost-cutting strategy
    - One way programs for the poor become "poor programs"

This paper

We study a large increase in provider payment for primary care for duals

- A federally-funded increase in *Medicaid* payments to Medicare levels

1. How did a Medicaid-focused policy change the payment of Medicare cost-sharing for duals?
    - Link claims for primary care in Medicare to their payment records in Medicaid
    - Measure total payments for primary care services for duals over time

2. How did increased payments impact the use of primary care for duals?
    - Diff-in-diff comparing primary care for duals and nonduals over time

3. How did the payment policy affect disparities in access to care?
    - Evaluate the DiD effect against the health-adjusted gap in primary care use

Findings

The policy increased payment of duals' cost-sharing for primary care by 14 p.p.

- Results in a sharp 6% increase in total payment for physicians

The increase in payments lead to an increase in primary care services for duals

- 6.3% increase in services, 5.4% increase in visits, 8.7% decrease in P(no visit)
- Services increase in the *month* of the policy change
- Increases are limited to targeted patients and targeted physicians

Before the policy, P(no visit) was higher for duals (conditional on observables)

- The payment policy closes 82% of the dual-nondual disparity in P(no visit)
- Reducing the disparity in payment reduced the disparity in access to care

Related Literature

- Furthers knowledge of payment policy in health care

    - Medicare: geographic adjustments for professional services (Clemens and Gottlieb 2014), payments to short and long term facilities (e.g., Einav et. al. 2018, Eliason et. al. 2018)
    - Medicaid: appointment availability audit study (e.g., Polsky et. al. 2015), self-reported utilization and health (e.g., Alexander and Schnell 2017), physician IRS-reported earnings (Gottlieb et al., 2020)

- Complements studies of demand-side incentives in health care

    - Medicare (e.g., Cabral and Mahoney 2018, Chandra, Gruber and McKnight 2010, Einav et. al. 2018), Employer Sponsored Insurance (e.g., Brot-Goldberg et. al. 2017, Kowalski 2016, Cabral 2017), Private insurance (e.g., Manning et. al. 1987; Newhouse 1993)

- Measures effects of insurance on health care access among low-income populations

    - access among Medicaid beneficiaries (e.g., Asplin et al. 2005, Bisgaier and Rhodes 2011; Rhodes et al. 2014)
    - overall impact of insurance (e.g., Oregon HIE studies, Brown et. al. 2015, Wherry et. al. 2018, Vabson 2018)

Outline

- Background and Data

- Identifying Variation and Empirical Strategy

- Main Results

- Mechanisms and Heterogeneity

Background: Coverage for Dual-Eligible Beneficiaries

Primary coverage for dual-eligibles from federal Medicare program
- Medicare pays providers the same for care provided to duals and nonduals
- Specifically, Medicare pays 80% of allowed amount after a small deductible

Providers are prohibited from charging duals for Medicare's cost-sharing

Historically, state Medicaid programs were liable for Medicare's cost-sharing

In recent years, Medicaid pays $\approx$ 44% of Medicare's cost-sharing (Haber et al., 2014)

[$\rightarrow$] Providers receive lower payments for serving duals relative to nonduals

Why doesn't Medicaid pay Medicare's cost-sharing?

Most states limit payment of cost-sharing by statute ▸ more detail
- Specifically, do not pay cost-sharing when .8* Medicare's allowed amount > Medicaid's allowed amount

However, cost-sharing often unpaid even when not limited by statute
- Low correlation between state statutory rates and actual payments, consistent with prior work on claim denials (KFF 2011; Gottlieb, Shapiro and Dunn 2018; Dunn et al. 2020)

Providers do not always submit claims to Medicaid for Medicare's cost-sharing
- Only approximately a third of cost-sharing claims are submitted

Background: ACA Payment Change

Increase in Medicaid payments to Medicare levels for primary care in 2013-2014

- Increase in payments funded at 100% FMAP

- "Primary Care":
    - Evaluation and Management (E&M) services (billed at $\approx$ half of office visits)
    - by "qualifying providers"
        i. have a qualifying specialty (e.g., primary care, internal medicine, cardiology)
        ii. attest that 60% of their Medicaid claims were for E&M services in the prior year.

Background: ACA Payment Change

This payment reform may increase provider payments through multiple channels:

- Paying Medicaid's allowed amount requires paying Medicare cost-sharing

- Federal funding may make states more likely to pay statutory rates
  - e.g., reduced incentive to deny claims or create administrative hurdles

- Increase in submission of cost-sharing claims to Medicaid
  - $\uparrow$ in $P(\text{payment})$
  - $\uparrow$ in awareness of or participation in Medicaid

Data

- Medicare claims
  - 20% of beneficiaries, 2010–2014
  - Master Beneficiary Summary File, medical and prescription drug claims

- Medicaid claims (MAX)
  - 100% of beneficiaries for reporting states, but states depart MAX over time
  - 13 states report cost-sharing claims with high quality 2011-2013

- **Merge** duals' primary care claims in Medicare to cost-sharing claim in Medicaid (if any)
  - match on bene ID, date, and service code
  - measures: share of cost-sharing paid, share of cost-sharing claims submitted, share of cost-sharing paid among submitted

Sample Restrictions and Variable Definitions

- Sample restrictions:
  - Enrolled 2010–2014 (similar results for unbalanced panel)
  - Always enrolled in fee-for-service]& Part B (to ensure observation of E&M)
  - Either always non-dual or always relevant dual type

- We define providers as "qualifying" for increased payments if
  - **i.** they have a qualifying specialty or sub-specialty
  - **ii.** E&M represents than 60% of their *Medicare* codes in at least one year
  - **iii.** they are an NP or PA practicing in a tax unit with a qualifying provider

Descriptive Statistics

	Dual-Eligible		Not Dual-Eligible	
	2010-2012	2013-2014	2010-2012	2013-2014
E&M Visits	11.43 (13.28)	13.22 (15.54)	9.37 (10.06)	10.71 (12.08)
Qualifying Providers	9.64 (11.92)	11.28 (14.21)	7.18 (8.65)	8.39 (10.69)
Non-qualifying Providers	1.79 (3.22)	1.94 (3.42)	2.18 (3.09)	2.32 (3.26)
% With Any E&M Visit	89.63 (30.49)	91.27 (28.22)	89.99 (30.01)	91.00 (28.62)
E&M Services (Work RVUs)	19.28 (30.93)	23.22 (38.63)	14.01 (20.63)	17.09 (26.91)
Qualifying Providers	16.97 (29.16)	20.66 (36.76)	11.44 (19.04)	14.28 (25.22)
Non-qualifying Providers	2.31 (4.33)	2.56 (4.78)	2.57 (3.8)	2.82 (4.17)
New Patient Visits	.77 (1.21)	.75 (1.19)	.82 (1.18)	.85 (1.22)
Total Work RVUs	38.41 (55.13)	41.91 (61.17)	33.05 (44.72)	36.8 (49.69)
Age	62.44 (16.78)	64.94 (16.76)	73.91 (9.11)	76.41 (9.08)
% Female	61.92 (48.56)		55.14 (49.74)	
% Poor Health in pre-period	61.12 (48.75)		54.09 (49.83)	
% Preventable ED visit in pre-period	10.32 (30.42)		4.35 (20.4)	
% in Primary Care Shortage Area	46.2 (49.86)		38.72 (48.71)	
Number of Beneficiary-years	1,019,067	679,378	9,599,970	6,399,980
Number of Beneficiaries	339,689		3,199,990	

Outline

- Background and Data

- **Identifying Variation and Empirical Strategy**

- Main Results

- Mechanisms and Heterogeneity

Identifying Variation: Background on Payment Change

Recall:

- Federally-funded increase to Medicaid's statutory payment levels could
  - Increase payments for submitted cost-sharing claims (b/c of statutory change)
  - Increase submission of cost-sharing claims
- Payment increase applied for qualifying providers serving duals

- We measure the change by comparing qualifying to nonqualifying within duals

Identifying Variation: Payment Change

Figure: Impact on Cost-Sharing Paid | Submission
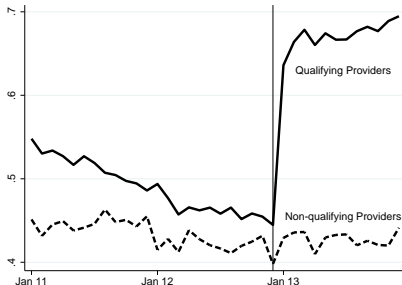
- Among submitted claims, share of cost-sharing paid increases by 21pp
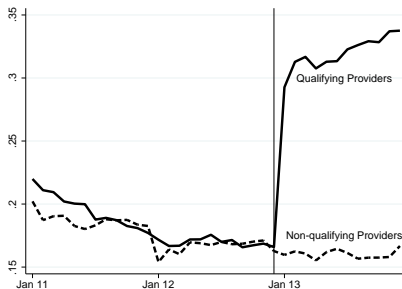
Identifying Variation: Payment Change

Figure: Impact on Share of Claims Submitted
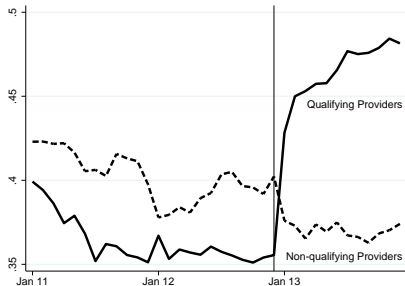
• Share of cost-sharing claims submitted increases by 12pp (or 1/3rd)

Identifying Variation: Payment Change

Figure: Impact on Cost-Sharing Paid

- Share of cost-sharing paid increases by 14 pp
- Due in equal parts to ↑ in submissions and ↑ in payment | submission
- 86% increase in Medicaid payments for cost-sharing
⇒ 6.5% increase in *total payments* for E&M for qualifying

Empirical Strategy

- 1st stage: the increase to *Medicaid* fees increased payments in *Medicare*
    - 6.5% increase in payments for qualifying providers treating duals
    - Increase occurs sharply in the month of the policy
    - No spillovers to non-qualifying providers treating duals
    - No reason to expect changes to nonduals at this time

- Next, estimate differences-in-differences leveraging several sources of variation:
    1. before vs. after payment reform is implemented
    2. duals vs. nonduals
    3. qualifying providers vs. non-qualifying providers

- Then, use these changes to calculate implied elasticities

Econometric Model

- Difference-in-difference specification leveraging dual vs. nondual variation:

$$y_{it} = \sum_{t \neq 2012} \beta_t \times I_t \times Dual_{it} + \alpha_t + \lambda Dual_{it} + \gamma X_{it} + \epsilon_{it}$$

  - y_{it}: E&M services (work RVUs), visits with E&M, any visit with E&M
  - includes additional controls (X_{it}) for age, gender, county fixed effects
  - robust standard errors clustered at the county level

- Normalize $\beta_{2012} = 0$, the year just prior to payment reform implementation

Identification

Assumption: Outcomes of interest would have evolved in parallel for dual and non-dual beneficiaries absent the payment reform.

- Three broad approaches to assessing the validity of this assumption:

  - Plot β_t coefficients over time to visually inspect for spurious pre-existing trends.

  - Illustrate the increase in utilization happens sharply upon implementation

  - Alternative specifications
    + Alt Spec 1: DD dual/nondual specification estimated separately for care provided by qualifying and not qualifying providers
    + Alt Spec 2: DD qual/nonqual specification estimated separately for dual and non-dual beneficiaries
    + Alt Spec 3: DDD specification leveraging both dual/non-dual and qual/non-qual differences

Econometric Model

- Difference-in-difference leveraging qualifying vs. non-qualifying variation:

$$y_{itq} = \sum_{t \neq 2012} \beta_t \times I_t \times Qual_q + \alpha_t + \lambda Qual_q + \gamma X_{it} + \epsilon_{it}$$

  - run separately for $Dual_i = 1$ and $Dual_i = 0$
  - includes additional controls (X_{it}) for age, gender, county fixed effects

- **Identification Assumption:** Outcomes of interest would have evolved in parallel for care provided by qualifying and non-qualifying providers absent the payment reform.

Econometric Model

- Triple differences specification leveraging both dual/nondual and qual/nonqual variation:

$$y_{itq} = \sum_{t \neq 2012} \beta_t \times I_t \times Qual_q \times Dual_{it} + \alpha_{t,Dual_{it}=1} + \phi_{t,Qual_q=1}$$

$$+ \pi_{Qual_q=1,Dual_{it}=1} + \gamma X_{it} + \epsilon_{it}$$

  - include controls for qualifying status of provider, dual status of beneficiary, and year fixed effects
  - includes additional controls (X_{it}) for age, gender, county fixed effects

- Normalize $\beta_{2012} = 0$, the year just prior to payment reform implementation

- **Identification Assumption:** Differences in services provided by qualifying and non-qualifying physicians would have evolved in parallel for dual and non-dual beneficiaries absent the payment reform.
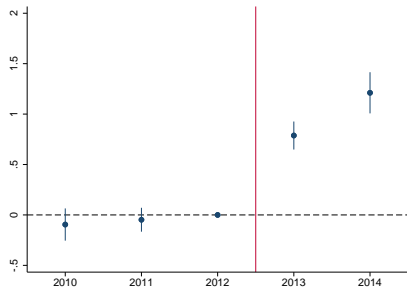
Outline

- Background and Data

- Identifying Variation and Empirical Strategy

- **Main Results**
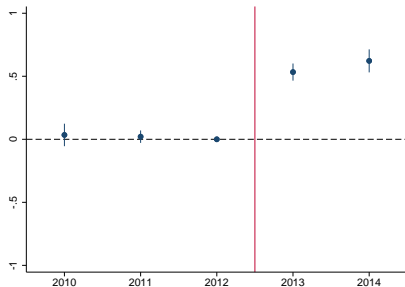
- Mechanisms and Heterogeneity

- Conclusion

Impact of Provider Payment Increase

Figure: Impact on E&M Services and Visits; DD dual vs. non-dual
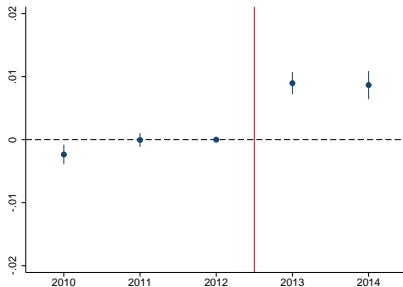

(a) E&M services (workRVUs)

(b) E&M visits

- Based on 2014 coefficients, a 1.21 (6.3%) increase in E&M services (workRVUs) and a 0.62 (5.4%) increase in E&M visits

Impact of Provider Payment Increase

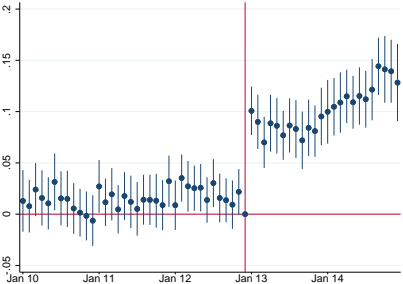Figure: Impact on Any E&M Visit; DD dual vs. non-dual

- Approximately 0.9 pp increase, or a 8.7% decrease in the mean share with no E&M visit in a given year (10.4%).
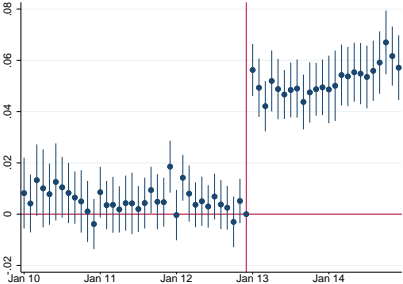
Impact of Provider Payment Increase

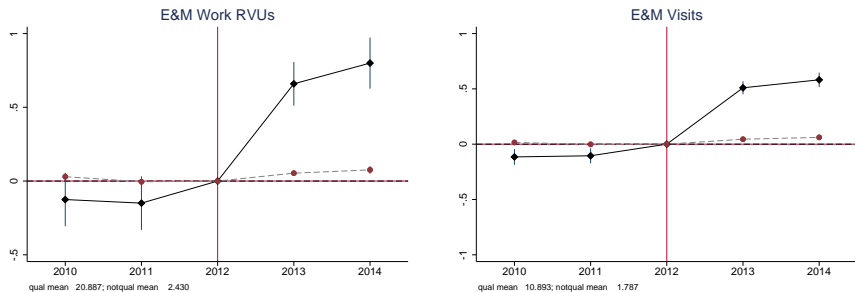**Figure:** Impact on *Monthly* E&M, DD dual vs. nondual

(a) E&M Services

(b) E&M Visits

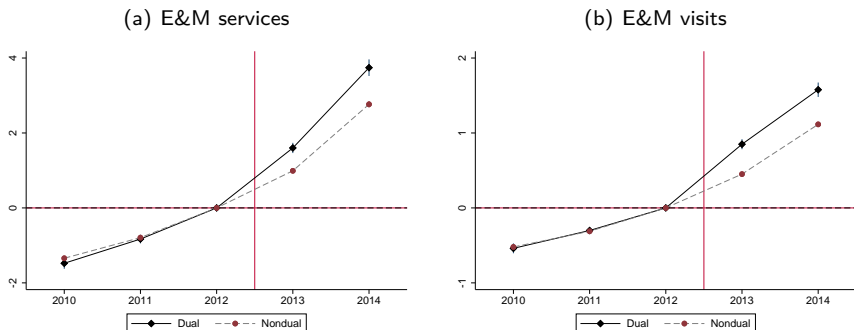# Robustness: Impact of Provider Payment Increase

Figure: Impact on E&M for Qualifying and Non-Qualifying; DD dual vs. nondual

- Black: care by qualifying providers; red: care by non-qualifying providers
- Only care by qualifying providers increases for duals relative to nonduals
- Implies no spillovers to non-qualifying providers

Robustness: Impact of Provider Payment Increase

Figure: Impact on E&M for Duals and Nonduals; DD qualifying vs. not qualifying
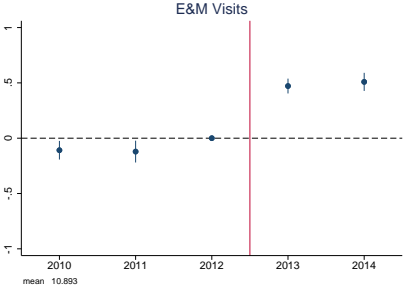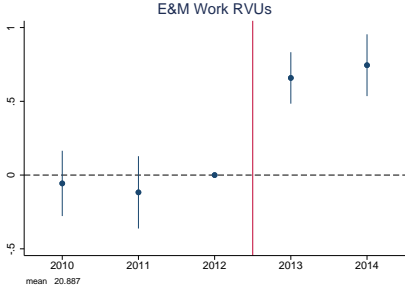

(a) E&M services

(b) E&M visits

- Black: duals; red: nonduals
- Care by qualifying increasing relative to non-qualifying over time period
- *Faster increase* for duals only in 2013 and 2014

Robustness: Impact of Provider Payment Increase

Figure: Impact on E&M Services and Visits; DDD

(a) E&M services

(b) E&M visits

Robustness: Alternative Specifications

Table: Alternative Specifications and Samples

| | Alternative Control Variables | | | Unbalanced Panel | | | Medicaid-Reporting States | | |
	E&M Services	E&M Visits	Any E&M	E&M Services	E&M Visits	Any E&M	E&M Services	E&M Visits	Any E&M
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2010*Dual	-0.165	0.010	-0.002	-0.629	0.088	0.009	0.107	0.156	-0.002
	(0.078)	(0.039)	(0.001)	(0.114)	(0.043)	(0.001)	(0.138)	(0.101)	(0.001)
	[0.035]	[0.800]	[0.034]	[0.000]	[0.038]	[0.000]	[0.437]	[0.125]	[0.087]
2011* Dual	-0.103	-0.005	0.000	0.097	0.276	0.008	-0.028	0.057	-0.001
	(0.061)	(0.024)	(0.001)	(0.064)	(0.028)	(0.001)	(0.105)	(0.053)	(0.001)
	[0.089]	[0.824]	[0.861]	[0.132]	[0.000]	[0.000]	[0.789]	[0.283]	[0.488]
2013* Dual	0.826	0.566	0.009	1.450	0.940	0.010	0.887	0.671	0.011
	(0.068)	(0.034)	(0.001)	(0.088)	(0.041)	(0.001)	(0.134)	(0.085)	(0.002)
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
2014* Dual	1.301	0.698	0.009	2.048	1.143	0.009	1.271	0.738	0.011
	(0.091)	(0.044)	(0.001)	(0.113)	(0.055)	(0.001)	(0.145)	(0.106)	(0.002)
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Dual Pre-Policy Mean	17.45	10.1	0.896	24.84	13.4	0.897	18.90	11.67	0.886
Dual Mean at Qualifying Providers	16.97	9.64		22.37	11.59		16.70	9.83	
Baseline Controls							X	X	X
County x Year Interaction	X	X	X						
Individual FE				X	X	X			
Sample	Balanced	Balanced	Balanced	Unbalanced	Unbalanced	Unbalanced	Balanced	Balanced	Balanced

Robustness: Alternative Specifications

Table: Impact on E&M, State Clustering and Alternative Group Definitions

	Baseline with State Clusters			"Near Poor" Control Group		
	E&M Services	E&M Visits	Any E&M	E&M Services	E&M Visits	Any E&M
	(1)	(2)	(3)	(4)	(5)	(6)
2010*Dual	-0.095	0.035	-0.002	-0.384	-0.201	-0.004
	(0.073)	(0.034)	(0.001)	(0.105)	(0.051)	(0.001)
	[0.199]	[0.315]	[0.035]	[0.000]	[0.000]	[0.001]
2011*Dual	-0.048	0.021	-0.000	-0.109	-0.044	-0.003
	(0.057)	(0.023)	(0.001)	(0.092)	(0.036)	(0.001)
	[0.410]	[0.375]	[0.950]	[0.239]	[0.230]	[0.016]
2013*Dual	0.788	0.533	0.009	0.744	0.463	0.003
	(0.120)	(0.080)	(0.001)	(0.102)	(0.043)	(0.001)
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.007]
2014*Dual	1.211	0.622	0.009	0.831	0.438	0.001
	(0.151)	(0.102)	(0.001)	(0.149)	(0.060)	(0.002)
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.521]
Dual Pre-Policy Mean	17.45	10.1	0.896	17.45	10.1	0.896
N	17,698,378	17,698,378	17,698,378	2,190,093	2,190,093	2,190,093

Interpretation: Impact on Access Gap

- One motivation for this policy was to increase utilization among low-income beneficiaries to address existing access gaps

- **Natural follow-on question**: How much did this policy work to close this gap in access to care across low- and high- income beneficiaries?

- One measure of access to care: "any visit in a given year"
    - Conditional on observable health, dual-eligibles are 1.1 pp less likely to have any E&M visit in a given year

- Back-of-the-envelope: Comparing this gap to our main estimates, our estimates imply the reform closed 82% of the observed gap in access across low- and higher-income beneficiaries

Interpretation: Elasticities

| | Based on Estimated Change in… | | | |
| | Payment Rate | | Payment Rate \| Submission | |
	Estimate	[95% CI]	Estimate	[95% CI]
Payment Change		(1)		(2)
PP Change Relative to Full Payment Rate	4.71	[4.17, 5.27]	4.59	[3.89, 5.21]
% Change in…				
Total Payments (Medicare + Medicaid)	6.51	[5.76, 7.29]	5.50	[4.58, 6.32]
Medicaid Payments	86.06	[71.98, 102.32]	28.11	[20.55, 35.91]
E&M services elasticity with respect to…				
% Change in Total Payments (Medicare + Medicaid)	1.18	[0.94, 1.47]	1.41	[1.06, 1.86]
% Change in Medicaid Payments	0.09	[0.07, 0.12]	0.28	[0.19, 0.40]
10pp Change Relative to Full Payment Rate	0.16	[0.13, 0.20]	0.17	[0.13, 0.22]
E&M visits elasticity with respect to…				
% Change in Total Payments (Medicare + Medicaid)	1.18	[0.89, 1.50]	1.41	[0.92, 1.95]
% Change in Medicaid Payments	0.09	[0.07, 0.12]	0.29	[0.16, 0.44]
10pp Change Relative to Full Payment Rate	0.16	[0.12, 0.21]	0.17	[0.12, 0.23]

Notes: This table presents implied elasticities and the associated bootstrapped 95 percent confidence intervals as described in the text.

▸ Compare to Prior Estimates

Interpretation: Elasticities

- Payment elasticity is informative about earnings elasticity

- Provision of physician services requires substantial other costs
    - e.g., office staff paid for role in scheduling and assisting with services
    - Using Medicare estimates of these costs and assuming they do not change,
    - $\rightarrow$ A 6.5% increase in payments leads to a 12% increase in physician earnings

- Our elasticity w.r.t. payment implies an elasticity w.r.t. earnings around 0.7

Summary: Impact of Provider Payment Increase

- Reform lead to an 6.3% increase in E&M services among duals

- Combine with payment change evidence to obtain implied elasticities
  - Elasticity of 1.2

- Effects are concentrated among targeted beneficiaries and providers.

- Increase of 0.90 pp in likelihood of having any E&M visit, representing a more than 80% closure of gap relative to nonduals of similar health.

$\rightarrow$ We examine heterogeneity to analyze targeting properties of this payment change and mechanisms behind effects.

Outline

- Background and Data

- Identifying Variation and Empirical Strategy
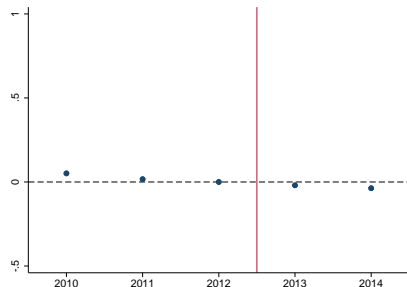
- Main Results

- **Mechanisms and Heterogeneity**

Mechanisms: Types of Visits

Figure: Impact on Provider Payments on E&M Visits ; DD dual vs. non-dual
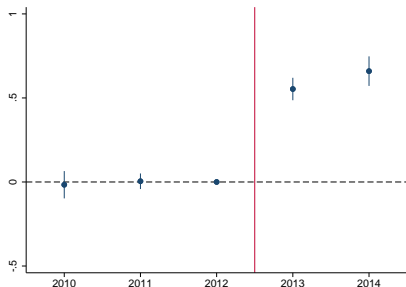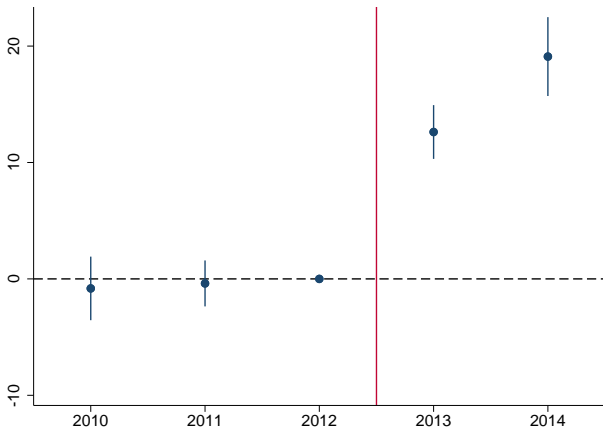

(a) Established Patient Visits   (b) New Patient Visits

$\rightarrow$ A 6.2% increase in established patient visits; small decrease in new patient visits.
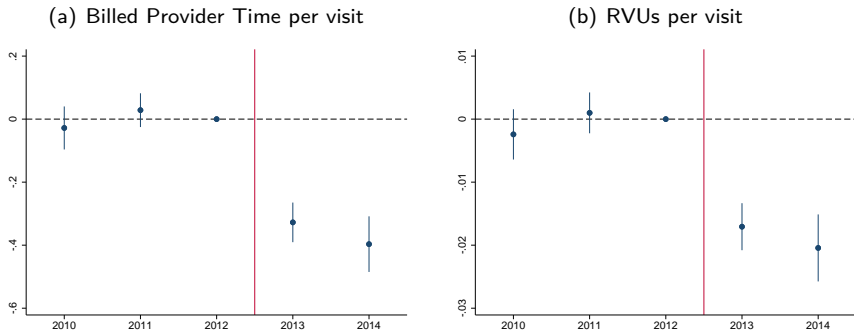
Mechanisms: Billed Provider Time

Figure: Impact on Provider Payments on E&M Billed Provider Time ; DD dual vs. non-dual

$\rightarrow$ On average, increase of 19 minutes 95% CI [16 min, 22 min]

Mechanisms: Billed Time and RVUs Per Visit

Figure: Impact on Provider Payments on E&M Visits ; DD dual vs. non-dual

(a) Billed Provider Time per visit (b) RVUs per visit

$\rightarrow$ Decrease of 0.40 minutes per visit and 0.02 RVUs per visit——approximately 1.5% and 1.3% decline relative to baseline means, respectively
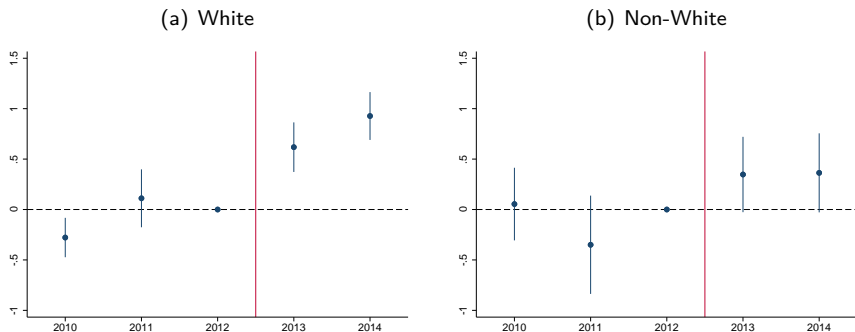
Heterogeneity: Sex

Figure: Impact on Provider Payments on E&M Services by Sex; DD dual vs. non-dual

(a) Female

(b) Male
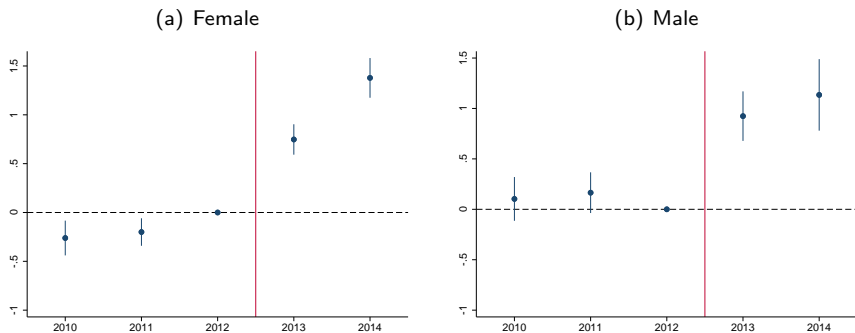
$\rightarrow$ Broadly similar effects by sex, not statistically distinguishable.

Heterogeneity: Race

Figure: Impact on Provider Payments on E&M Services by Race; DD dual vs. non-dual

(a) White   (b) Non-White

$\rightarrow$ Effects larger among white beneficiaries (0.96 RVUs or 5.2%) compared to non-white beneficiaries (0.24 RVUs or 1.5%)
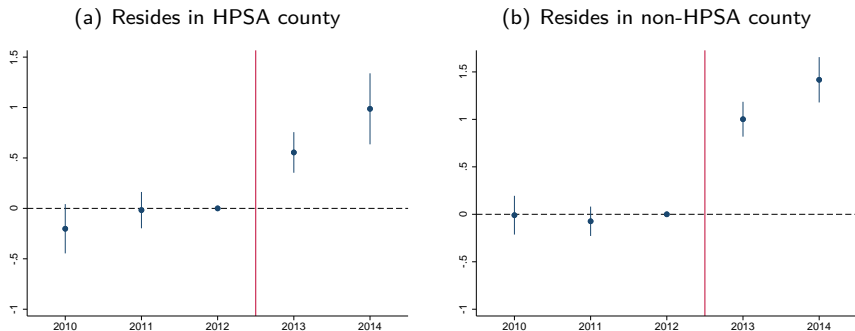
Heterogeneity: Age

Figure: Impact on Provider Payments on E&M Services by Age ; DD dual vs. non-dual

(a) Age ≤ 75 (b) Age > 75
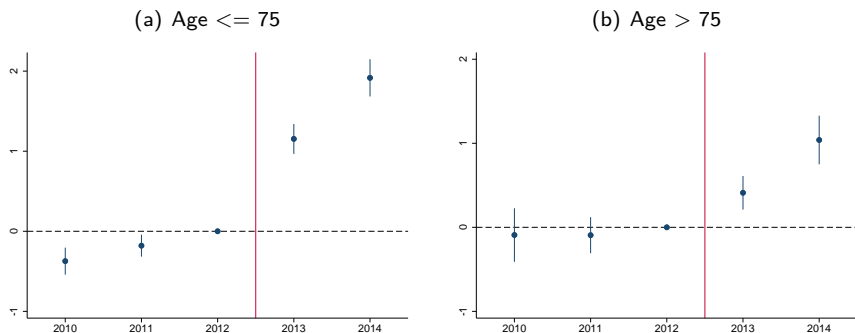
$\rightarrow$ Effect larger among those who are younger (1.92 RVUs or 10.3%) compared to those who are older (1.04 RVUs or 5.0%)

# Heterogeneity: Resides in HPSA (Health Professional Shortage Area)

Figure: Impact on Provider Payments on E&M Services by Residence in HPSA Area; DD dual vs. non-dual

(a) Resides in HPSA county

(b) Resides in non-HPSA county

$\rightarrow$ Effect larger among those residing outside of HPSA area (1.42 RVUs or 7.3%) compared to those residing in HPSA area (0.99 RVUs or 5.2%)

Heterogeneity: Patient Prior Health

Figure: Impact on Provider Payments on E&M Services by Patient Health in Pre-Period; DD dual vs. non-dual

(a) Poor Health (Charlson Index ≥ 2) (b) Good Health (Charlson Index ≤ 1)
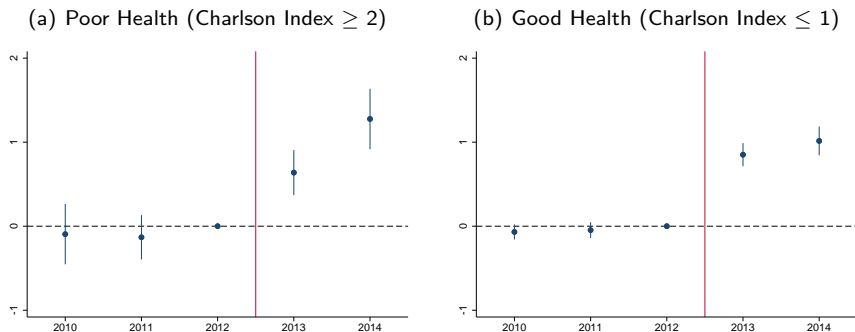
$\rightarrow$ Similar effect in levels. In percent terms, effect is more than double among those in good health (17.0%) compared to those in poor health (6.9%) at baseline

Heterogeneity: Prior Avoidable ED Visits

Figure: Impact on Provider Payments on E&M Services by Avoidable ED Visit in Pre-Period; DD dual vs. non-dual

(a) With prior avoidable ED visit

(b) With no avoidable ED visit
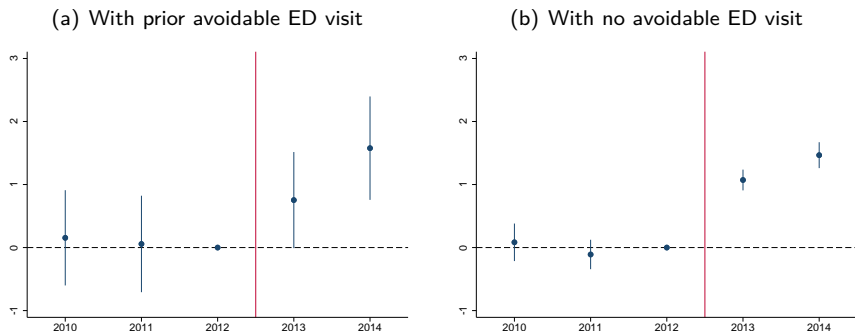
$\rightarrow$ Similar effect in levels. In percent terms, effect is roughly double among those with no prior avoidable ED visit (11.0%) compared to those with a prior avoidable ED visit (5.5%).

Outline

- Background and Data

- Identifying Variation and Empirical Strategy

- Main Results

- Mechanisms and Heterogeneity

Conclusion

- Leverage a large ACA increase in provider payments for E&M

- Payment reform lead to a 6.3% increase in targeted services (E&M utilization) and a 5.4% increase in associated visits
  - Implied elasticity of approximately 1.2.

- Investigate mechanisms behind expansion of supply
  - Increase in established patient visits, no increase in new patient visits. No increase in resources per visit.

- Explore heterogeneity in impacts across patients
  - Effects largest for those who are relatively younger, white, live in an area with many providers per captia
  - Larger impacts in percent terms among those with better baseline health and no prior avoidable ED visits

Conclusion

- While recent public policy has made tremendous efforts to expand access to health care, there are still large disparities in health care access across low- and high- income individuals.

- Much of the policy and research focus has been demand-side policies, with little known about how supply side policies—such as physician payments—may affect these disparities.

- Within the US's largest public health insurance program—Medicare—there is effectively a two-tiered system where providers receive lower payments for care provided to low-income beneficiaries compared to the same services provided to higher income individuals.

- Our work demonstrates provider payments are a key determinant of disparities in access to health care and reforming provider payments may work to close gaps in health care access and health.

Pre-Existing State Statutory Payments vs. Actual Payments

- Since BBA 1997, states can formally adopt "lesser of" reimbursement policies and most states have these policies.
    - state pays min{Medicare cost-sharing, max(standard Medicaid rate-Medicare payment, 0)}

- Pre-exisiting state statutory variation from two sources:
    - state adoption of "lesser of" policies
    - conditional on adoption, [limited] variation in the extent to which lesser of policy would bind due to variation in standard Medicaid rates

→ In practice: Based on matched Medicare and Medicaid administrative data:
    - Providers are paid roughly 45% of Medicare's cost-sharing for E&M services provided to dual-eligibles for submitted claims
   - Actual payments appear to poorly conform to state statutory rates

Pre-Existing State Statutory Payments vs. Actual Payments

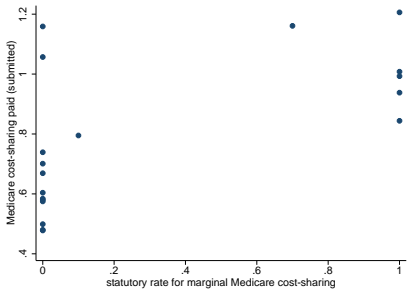| State	Statutory Payment (Marginal)	Actual Cost-Sharing Paid	Fraction of Claims Submitted	Actual Cost-Sharing Paid Conditional on
AK	1	0.91	0.89	1.01
MS	1	0.65	0.74	0.84
ND	1	0.71	0.73	0.94
NE	1	0.86	0.86	0.99
VT	1	0.98	0.79	1.21
MT	0.7	0.93	0.73	1.16
NM	0.1	0.32	0.37	0.80
AL	0	0.27	0.24	0.67
CT	0	0.11	0.08	0.50
FL	0	0.16	0.09	1.06
GA	0	0.22	0.21	0.60
IL	0	0.14	0.12	0.48
KY	0	0.24	0.28	0.58
LA	0	0.42	0.65	0.58
MA	0	0.24	0.17	0.70
MD	0	0.80	0.71	1.16
MI	0	0.13	0.09	0.48
SC	0	0.23	0.27	0.58
WV	0	0.29	0.18	0.74

Note: Source MACPAC (2009)

Pre-Existing State Statutory Payments vs. Actual Payments

(c) Cost-Sharing Paid
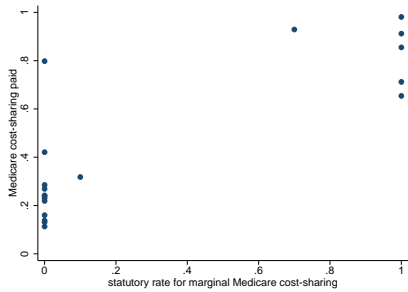
(d) Cost-Sharing Paid | Submitted

Comparison to Prior Estimates

Most closely related estimates: Clemens and Gottlieb (2014) analysis of GAF update, though some important differences between our setting and their setting:

- Clemens and Gottlieb (2014):
    - payment change for all professional services provided to all Medicare beneficiaries
    - mean absolute value of payment change 1.7% (range roughly $+/-$ 4%)
    - look at short-, medium-, and long-run effects

- Cabral, Carey, and Miller (2022):
    - payment change for E&M services provided to a subset of Medicare beneficiaries
    - mean increase in available payments (payments conditional on submission): 5.5% of total payments (28% increase in Medicaid portion of payment)
    - mean increase in actual payments: 6.5% of total payments (86% increase in Medicaid portion of payment)
    - look at short-run effects

Comparison to Prior Estimates

With these points in mind, we can compare estimates on the impact of payment rates on E&M services provided:

- Clemens and Gottlieb (2014): Appendix Table D.4 implied payment elasticity for E&M services (RVUs)
  - short-run (1-2 years): 0.42 with 95% CI:[-0.38, 1.21]
  - medium-run (3-4 years): 0.97 with 95% CI: [-0.19, 2.13]
  - long-run (5-10 years): 0.23 with 95% CI: [-1.26, 1.72]

- Cabral, Carey, and Miller (2022):
  - short-run (2 years), available payment: 1.41 with 95% CI: [1.06, 1.86]
  - short-run (2 years), actual payment: 1.18 with 95% CI: [0.94, 1.47]