

**ACA Dependent Coverage Expansions and Young Adults with Early Psychosis Treatment:  
Effects on Hospital-based Care**

**Supplementary Materials**

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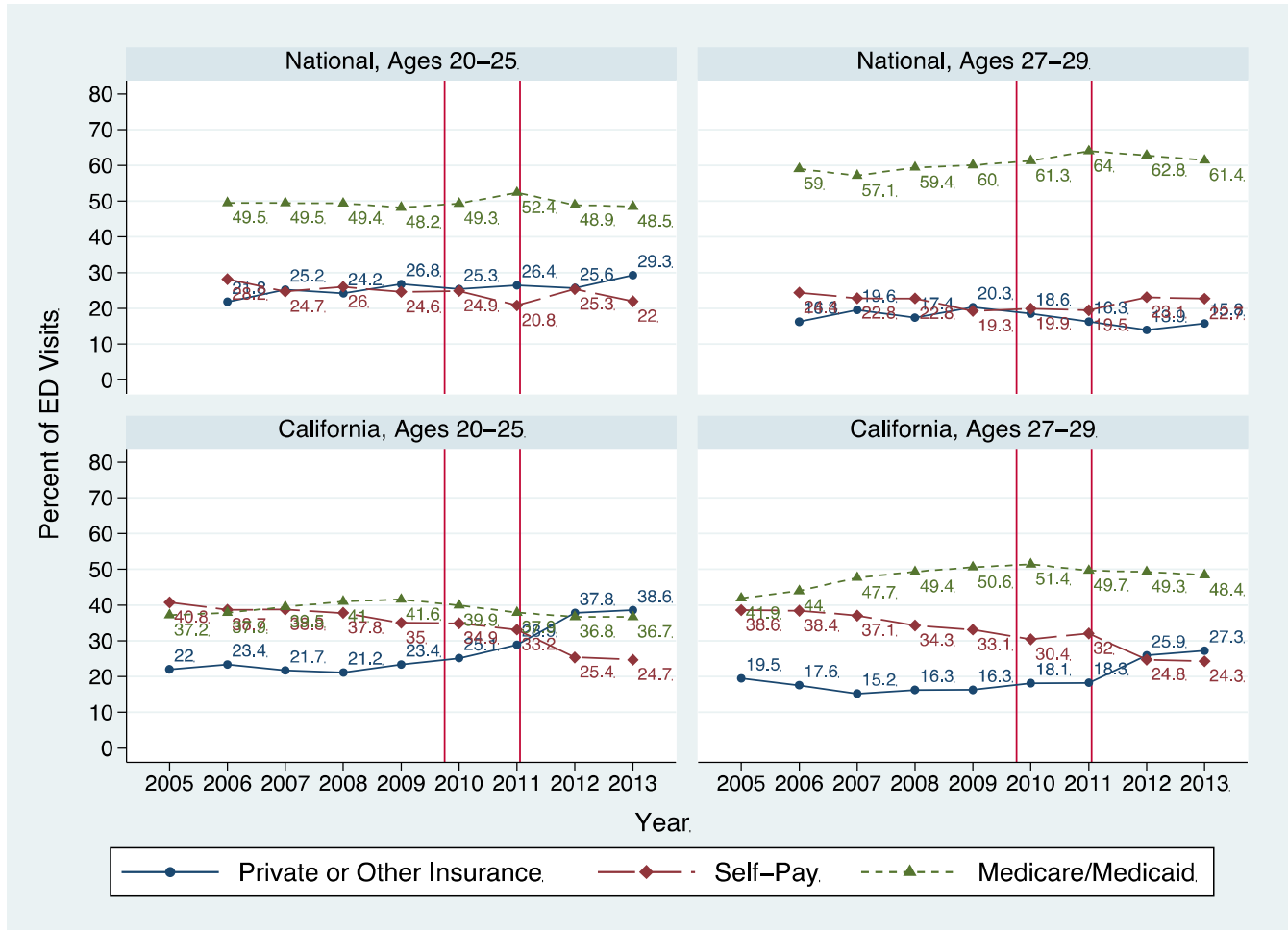
**Emergency department results**

**Results by sex**

**Sensitivity to diagnosis: Primary diagnosis of schizophrenia or psychosis (with or without co-occurring substance use disorder)**

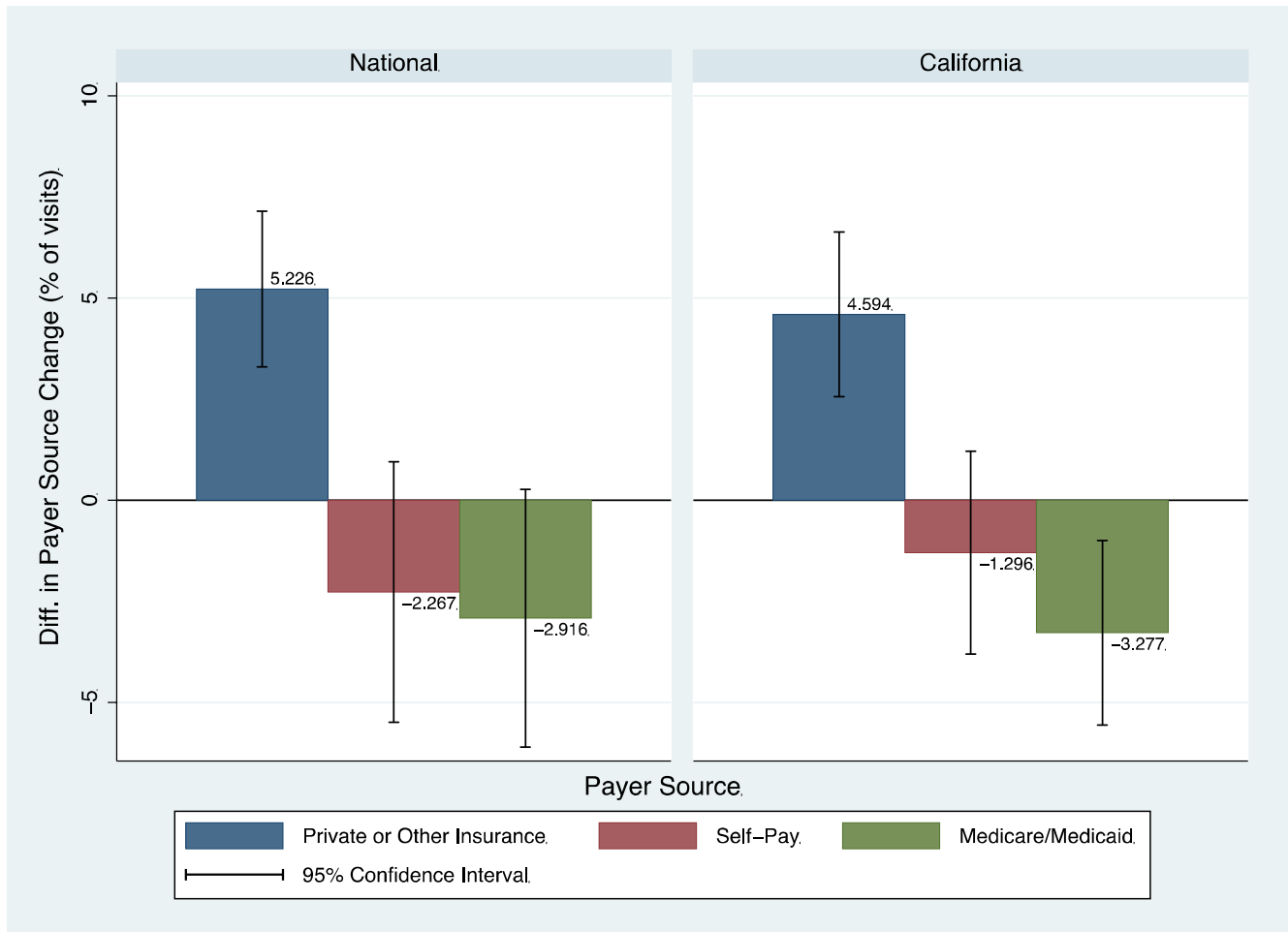
### Supplemental Exhibit 1: Emergency Department Results

Payer source for emergency department visits before and after coverage expansion, by age group and sample (national and California)



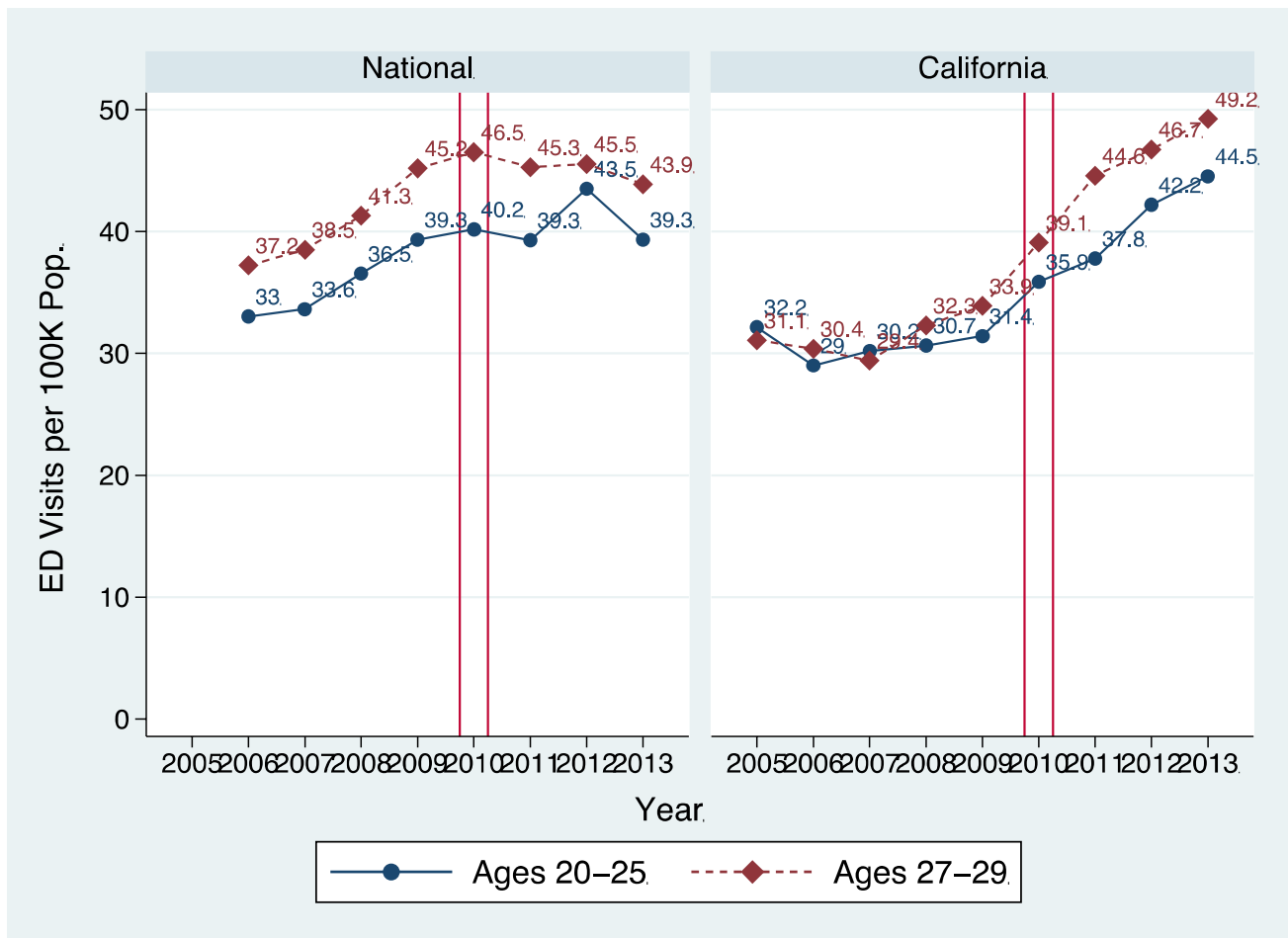
Notes: Distribution of unadjusted primary expected payer source for emergency department visits with a principal diagnosis of schizophrenia or psychosis. Individuals with co-occurring substance use disorder were excluded from the sample in all cases. Before coverage expansion period: national, January 2006–March 2010; California, January 2005–March 2010. After coverage expansion period: October 2010–December 2013. Medicare or Medicaid includes Medicare, Medicaid, and, in California, county indigent programs and other indigent programs. Private or Other Insurance includes private (commercial) insurance plans, workers’ compensation, other government programs, and any other payer source.

Estimated differential change in payer source for emergency department visits before and after coverage expansion by age group, nationally and in California



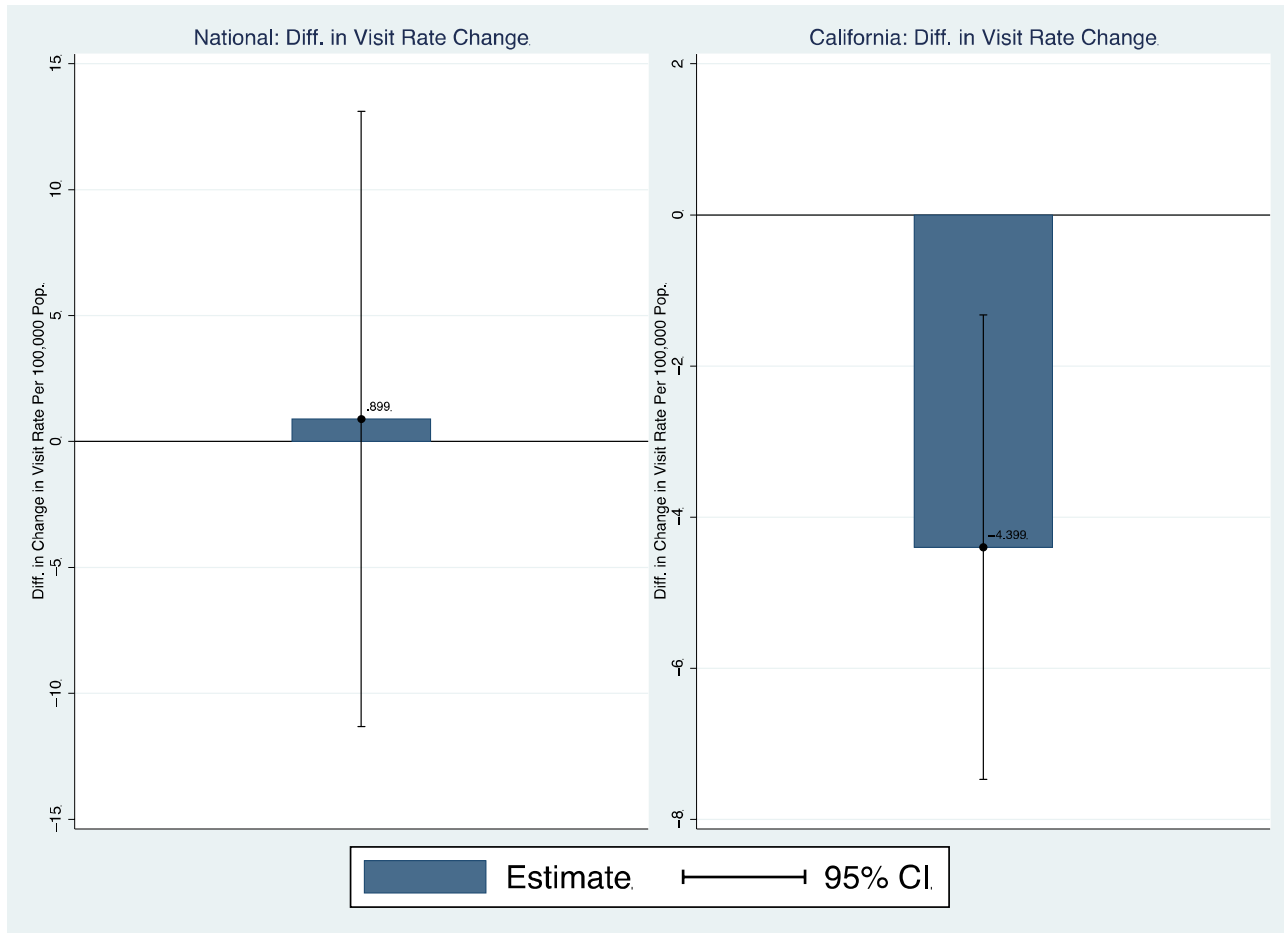
Notes: Changes in primary expected payer source for emergency department visits with a principal diagnosis of schizophrenia or psychosis; differences between estimated payer source change (%) for younger adults (ages 20-25) and the reference group (ages 27-29) are shown. Individuals with co-occurring substance use disorder were excluded from the sample in all cases. Before coverage expansion period: national, January 2006–March 2010; California, January 2005–March 2010. After coverage expansion period: October 2010–December 2013. National estimates: Private or Other Insurance, 5.226% (95% CI, 3.302 to 7.150;  $p < 0.001$ ); Self-Pay, -2.267% (95% CI, -5.490 to 0.956;  $p = 0.166$ ); Medicare or Medicaid, -2.916% (95% CI, -6.101 to 0.270;  $p = 0.072$ ). California estimates: Private or Other Insurance, 4.594% (95% CI, 2.557 to 6.632;  $p < 0.001$ ); Self-Pay, -1.296% (95% CI, -3.802 to 1.211;  $p = 0.297$ ); Medicare or Medicaid, -3.227% (95% CI, -5.558 to -0.996;  $p = 0.007$ ).

### Emergency Department Quarterly Visit Rate for Schizophrenia or Psychosis Diagnosis, National and California



Notes: Average quarterly rates of emergency department visits per 100,000 population with a principal diagnosis of schizophrenia or psychosis. Individuals with co-occurring substance use disorder were excluded from the sample in all cases. To facilitate presentation the average quarterly rate for the specified year are presented.

Estimated differential change in quarterly rate of emergency department visits before and after coverage expansion by age group, nationally and in California



Notes: Estimated changes in rate of emergency department visits per 100,000 persons with schizophrenia or psychosis diagnosis; differences between younger adults (ages 20-25) and the reference group (ages 27-29) in the estimated changes in discharges/readmissions are shown. Individuals with co-occurring substance use disorder were excluded from the sample. Before coverage expansion period: national, January 2006–March 2010; California, January 2005–March 2010. After coverage expansion period: October 2010–December 2013. *Left*: National estimates: 0.899 (95% CI: -11.31 to 13.11;  $p = 0.884$ ). *Right*: California estimates: -4.399 (95% CI: -7.474 to -1.324;  $p = 0.007$ ).

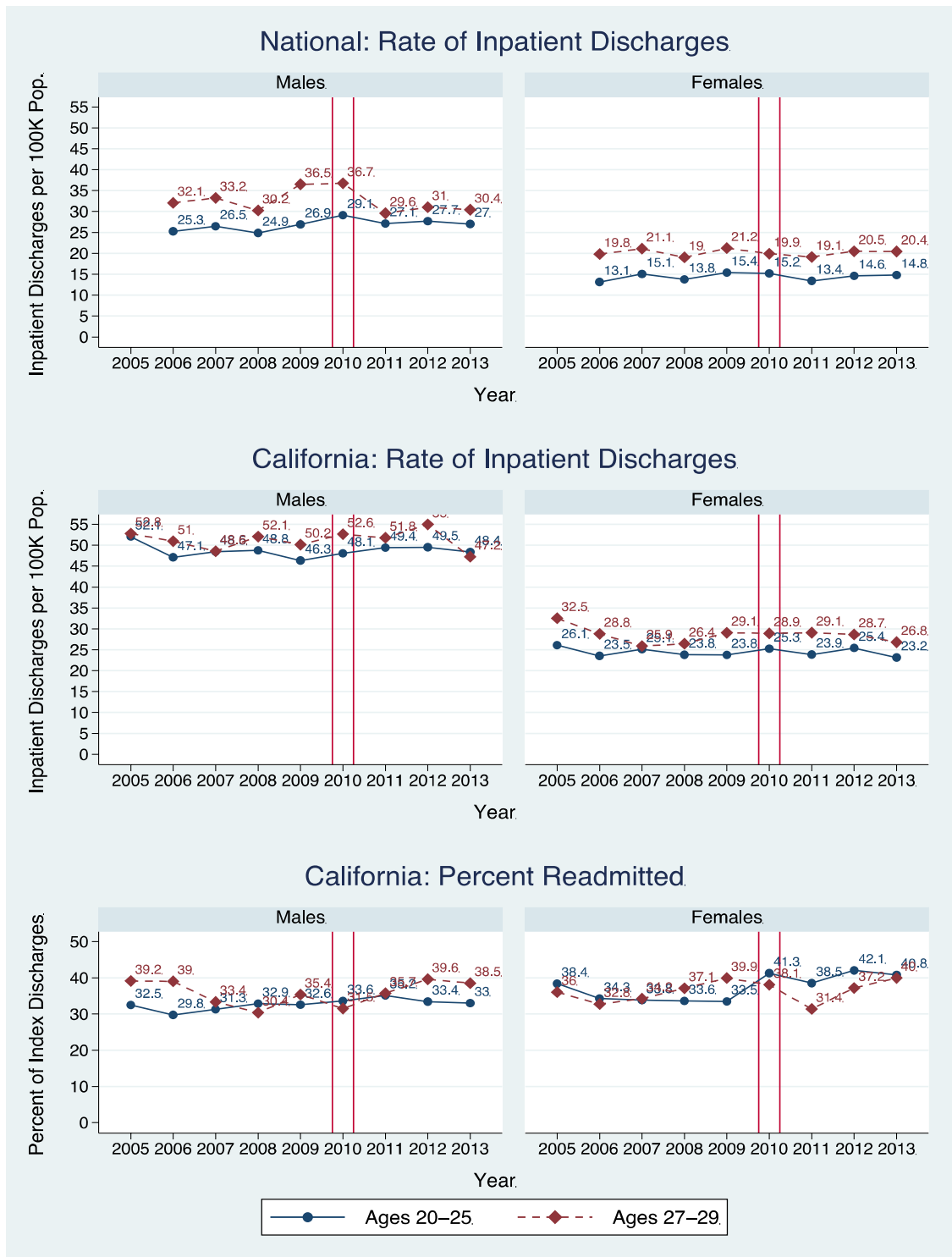
## Supplemental Exhibit 2: Results by sex

Estimated differential change in payer source for inpatient discharges with schizophrenia or psychosis diagnosis, by sex.

	Payer source for discharges with schizophrenia or psychosis diagnosis % Private			Payer source for discharges with schizophrenia or psychosis diagnosis % Self-pay			Payer source for discharges with schizophrenia or psychosis diagnosis % Medicaid or Medicare		
<b>NATIONAL (2006 Q1 - 2013 Q4)</b>									
Both genders	Coef	p-value	CI	Coef	p-value	CI	Coef	p-value	CI
Ages 20-25 x Post	5.847***	[1.24e-08]	[3.989 - 7.705]	-1.345*	[0.0964]	[-2.935 - 0.245]	-4.580***	[0.000973]	[-7.249 - -1.910]
Ages 27-29 x Post	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted
Females Only									
Ages 20-25 x Post	3.981***	[0.00185]	[1.605 - 6.357]	-1.118	[0.182]	[-2.793 - 0.556]	-3.018**	[0.0474]	[-5.998 - -0.0366]
Ages 27-29 x Post	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted
Males Only									
Ages 20-25 x Post	7.633***	[5.83e-09]	[5.712 - 9.554]	-1.563**	[0.0465]	[-3.101 - -0.0257]	-6.071***	[4.57e-07]	[-7.994 - -4.148]
Ages 27-29 x Post	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted
<b>CALIFORNIA (2005 Q1 - 2013 Q4)</b>									
Both Genders									
Ages 20-25 x Post	6.193***	[0.000155]	[3.342 - 9.045]	-0.447	[0.372]	[-1.460 - 0.567]	-5.778***	[0.000478]	[-8.731 - -2.825]
Ages 27-29 x Post	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted
Females Only									
Ages 20-25 x Post	5.441***	[0.00233]	[2.143 - 8.739]	-0.549	[0.509]	[-2.240 - 1.142]	-4.960***	[0.00877]	[-8.548 - -1.372]
Ages 27-29 x Post	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted
Males Only									
Ages 20-25 x Post	6.879***	[0.000338]	[3.479 - 10.28]	-0.331	[0.617]	[-1.679 - 1.017]	-6.546***	[0.000391]	[-9.826 - -3.265]
Ages 27-29 x Post	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted

Notes: Changes in primary expected payer source for inpatient discharges with schizophrenia or psychosis diagnosis; differences between estimated payer source change (%) for younger adults (ages 20-25) and the reference group (ages 27-29) are shown. Individuals with co-occurring substance use disorder were excluded from the sample in all cases. . Before coverage expansion period: national, January 2006–March 2010; California, January 2005–March 2010. After coverage expansion period: October 2010–December 2013.

# Inpatient Quarterly Discharge Rate and Percentage Readmitted by Age Group; by Sex, Nationally, and in California



Notes: Average quarterly rates of inpatient discharges and percent readmitted within 30 days with a principal index diagnosis of schizophrenia or psychosis (with no co-occurring substance use disorder diagnosis); results by sex. Individuals with co-occurring substance use disorder were excluded from the sample in all cases. To facilitate presentation the average quarterly rate for the specified year are presented. *Top*: National rate of quarterly inpatient discharges per 100,000 population. *Middle*: California quarterly rate of inpatient discharges per 100,000 population. *Bottom*: California readmissions; the percentage readmitted reflects the percentage of all index discharges with a principal diagnosis of schizophrenia or psychosis that were readmitted for any cause within 30 days.

**Supplemental Exhibit 3: Sensitivity results by diagnosis: Schizophrenia or Psychosis, with or without co-occurring substance use disorder**

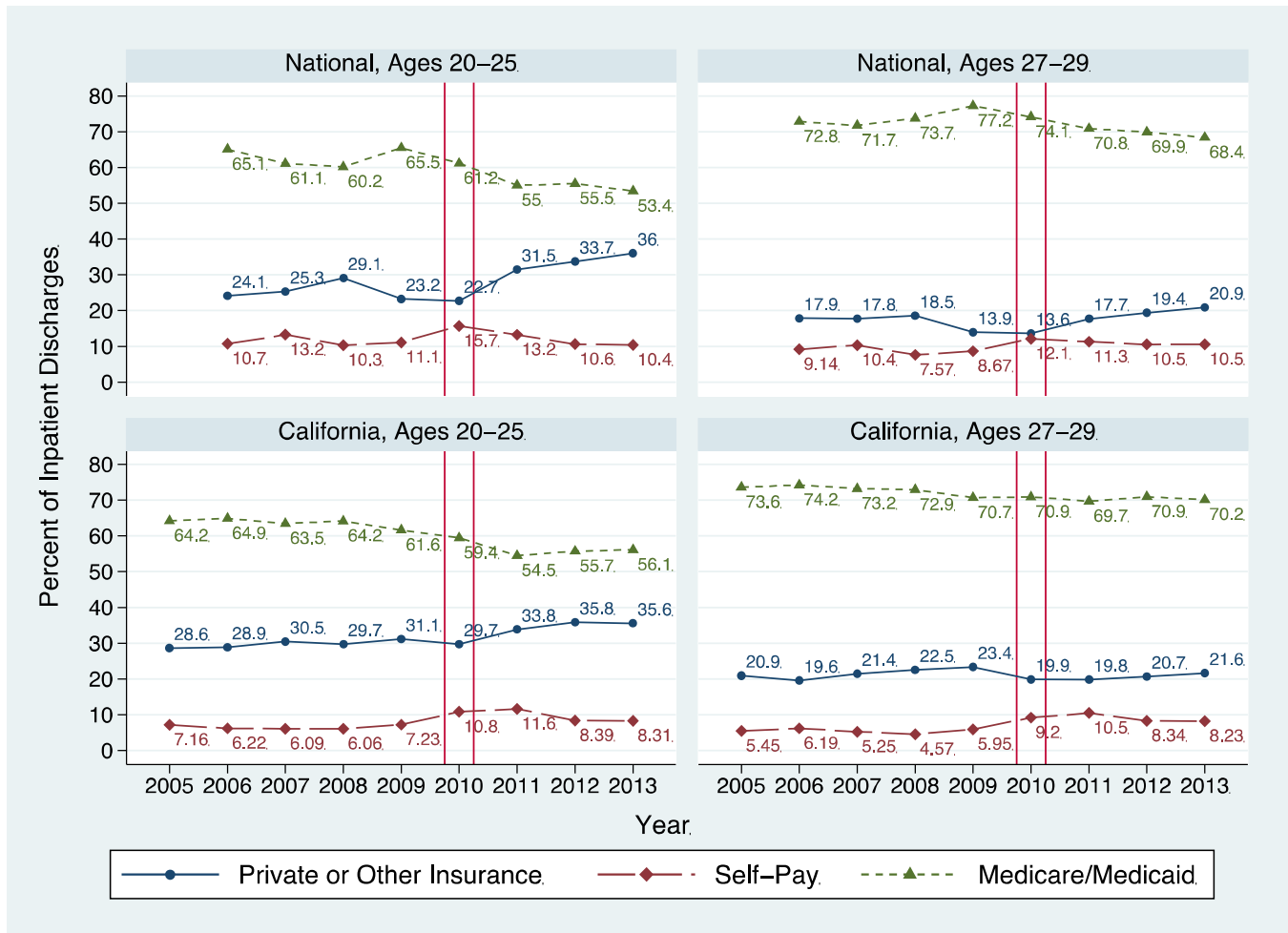
Selected Characteristics of Inpatient Discharges and Emergency Department Visits, National and California

	Schizophrenia or Psychosis (with or without co-occurring substance use disorder diagnosis)	
	Ages 20-25	Ages 27-29
<b>INPATIENT DISCHARGES</b>		
<b>National (2006Q1 – 2013Q4)</b>		
Quarterly discharge rate per 100,000 population	35.6	43.2
% female	28.6%	32.4%
Payer Source:		
% private/other insurance	28.5%	17.4%
% self-pay	11.9%	10.1%
% Medicare/Medicaid	59.3%	72.3%
<b>California (2005Q1 – 2013Q4)</b>		
Discharge rate per 100,000 population	66.0	69.3
Percent readmitted within 30 days	35.7%	38.6%
% psychiatric hospital	35.8%	32.3%
% female	27.9%	30.9%
Payer Source:		
% private/other insurance	31.8%	21.1%
% self-pay	8.12%	7.26%
% Medicare/Medicaid	60.0%	71.7%
<b>ED VISITS</b>		
<b>National (2006Q1 – 2013Q4)</b>		
Quarterly visit rate per 100,000 population	60.1	69.2
% female	28.2%	31.4%
Payer Source:		
% private/other insurance	25.6%	16.0%
% self-pay	23.8%	20.9%
% Medicare/Medicaid	50.2%	62.9%
<b>California (2005Q1 – 2013Q4)</b>		
Quarterly visit rate per 100,000 population	42.2	45.1
% female	28.5%	30.8%
Payer Source:		
% private/other insurance	28.4%	20.0%
% self-pay	33.7%	32.1%
% Medicare/Medicaid	37.9%	47.9%

Notes: inpatient stays and emergency care come from the 2006-2013 National Inpatient Sample (prior to 2012, the Nationwide Inpatient Sample (NIS)), and the Nationwide Emergency Department Sample (NEDS), from the AHRQ Healthcare Cost and Utilization Project (HCUP) and the 2005-2013 Patient Discharge Database and Emergency Department (ED) Database, both produced by California's Office of Statewide Health Planning and Development. Sample includes individuals with a principal diagnosis of schizophrenia or psychosis. Individuals with co-occurring substance use disorder were excluded from the analyses. Payer source is the primary expected payer. Medicare or Medicaid includes Medicare, Medicaid, county and other indigent programs (California only). Private or other Insurance includes private (commercial) insurance plans, workers' compensation, other government programs, and any other payer source. For national data, HCUP-provided weights are used when calculating the numerators to extrapolate samples to the universe of hospital or ED visits and to account for the change in sampling design of the NIS.

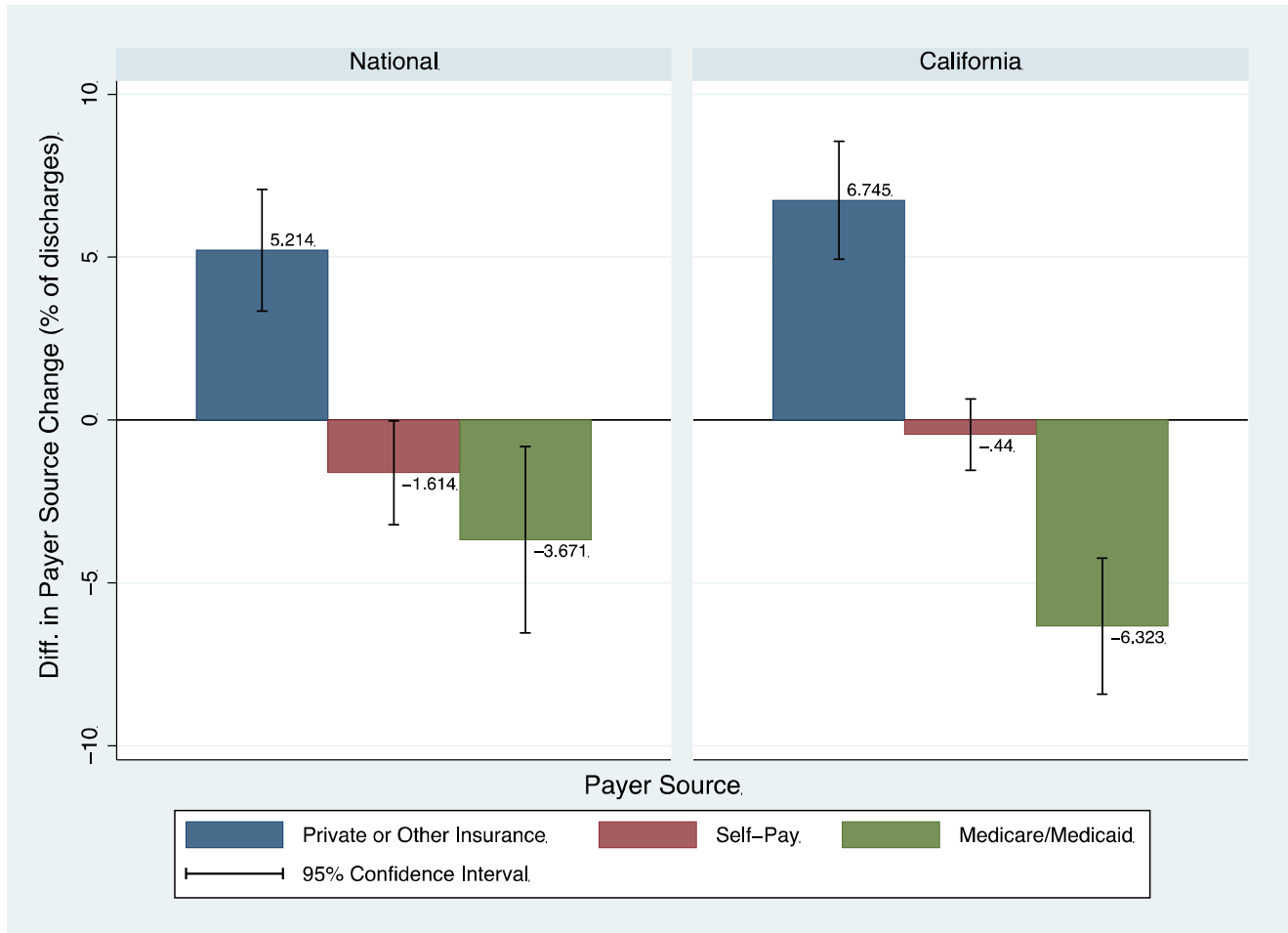


Payer source for inpatient discharges with Schizophrenia or Psychosis Diagnosis (with or without co-occurring substance use disorder) before and after coverage expansion, by age group and sample (National and California)



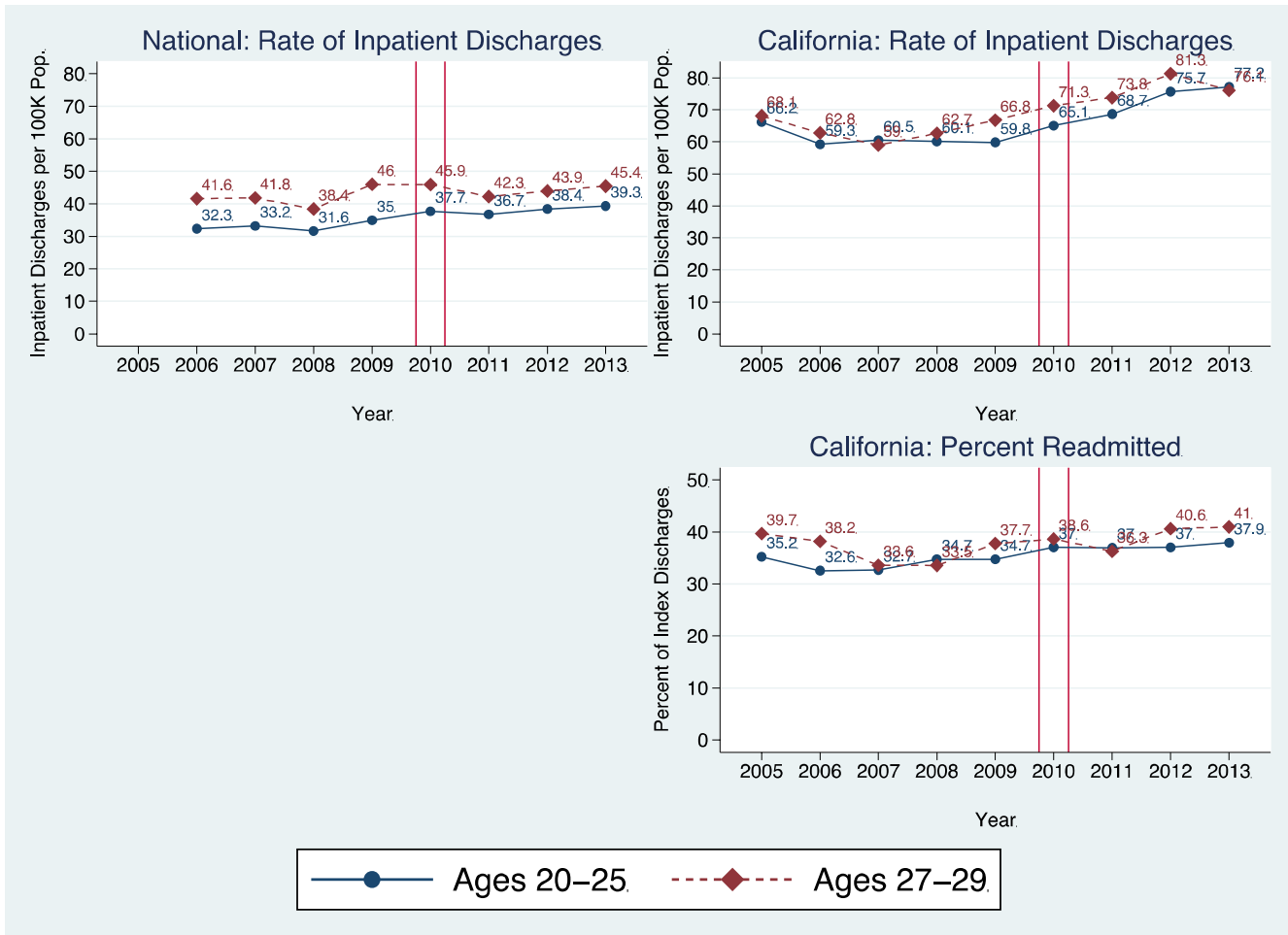
Notes: Payer source is the primary expected payer for inpatient discharges with a principal diagnosis of schizophrenia or psychosis. Medicare or Medicaid includes Medicare, Medicaid, and, in California, county indigent programs and other indigent programs. Private or Other Insurance includes private (commercial) insurance plans, workers' compensation, other government programs, and any other payer source.

Estimated differential change in payer source for inpatient discharges (with or without co-occurring substance use disorder) before and after coverage expansion by age group, nationally and in California



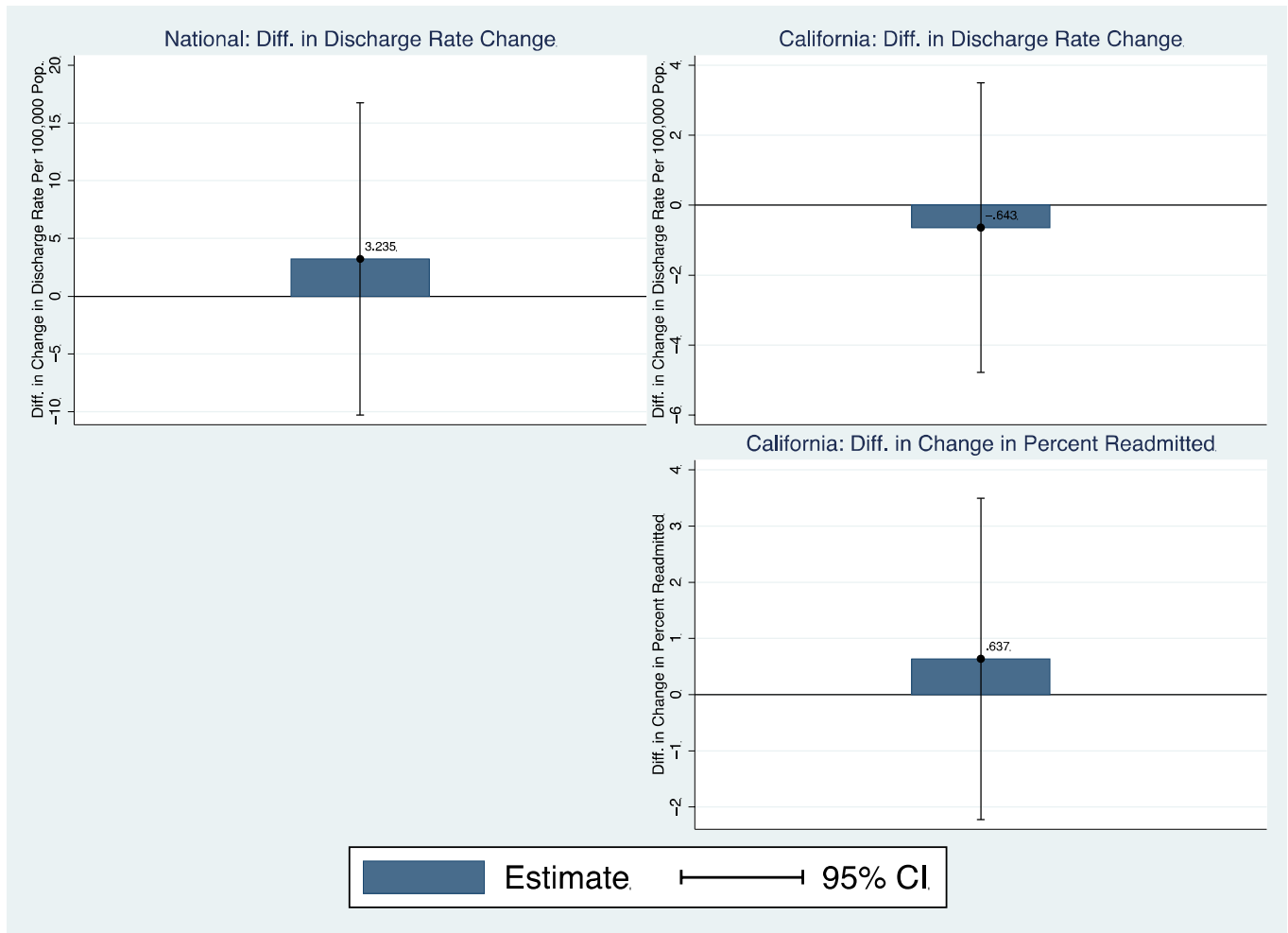
Notes: Changes in payer source for inpatient discharges with a principal diagnosis of schizophrenia or psychosis; differences between estimated change in primary expected payer source (%) for younger adults (ages 20-25) and the reference group (ages 27-29) are shown. National estimates: Private or Other Insurance, 5.214% (95% CI, 3.344 to 7.084;  $p < 0.001$ ); Self-Pay, -1.614% (95% CI, -3.208 to -0.02;  $p = 0.047$ ); Medicare or Medicaid, -3.671% (95% CI, -6.53 to -0.812;  $p = 0.012$ ). California estimates: Private or Other Insurance, 6.745% (95% CI, 4.936 to 8.553;  $p < 0.001$ ); Self-Pay, -0.440% (95% CI, -1.537 to 1.656;  $p = 0.415$ ); Medicare or Medicaid, -6.323% (95% CI, -8.413 to -4.223;  $p < 0.001$ ).

Inpatient Quarterly Discharge Rates (national and California) and Percentage Readmitted (California), with or without co-occurring substance use disorder, by age group



Notes: Average quarterly rates of inpatient discharges are the rates of discharges with a principal diagnosis of schizophrenia or psychosis per 100,000 population. To facilitate presentation the average quarterly rate for the specified year are presented. The percentage readmitted reflects the percentage of all index discharges with a principal diagnosis of schizophrenia or psychosis that were readmitted for any cause within 30 days.

Estimated differential change in quarterly rate of inpatient discharges (national and California) and percent readmitted (California) before and after coverage expansion, with or without co-occurring substance use disorder, by age group



Notes: Estimated changes in rate of inpatient discharges per 100,000 persons and percent readmitted with a principal diagnosis of schizophrenia or psychosis; differences between younger adults (ages 20-25) and the reference group (ages 27-29) in the estimated changes in discharges/readmissions are shown. *Top left:* Differences for discharge rate, national estimates: 3.235 (95% CI: -10.29 to 16.76;  $p = 0.636$ ). *Top Right:* Differences for discharge rate, California estimates: -0.643 (95% CI: -4.78 to 3.493;  $p = 0.751$ ). *Bottom right:* Differences for percent readmitted, California estimates: 0.637 (95% CI: -2.223 to 3.498;  $p = 0.65$ ).