

Supplementary Table A. Mean number of opioid prescriptions in 2017 according to whether physicians received opioid-related industry payments in 2016 stratified by physician characteristics.

	Received in 2016	Not received in 2016	Difference (95% CI)	P value for difference	P value for interaction
Total	153.8 ± 2.0	129.7 ± 1.6	24.1 (19.1 to 29.1)	<0.001	-
Sex					
Female	116.9 ± 3.0	96.4 ± 2.8	20.5 (12.4 to 28.5)	<0.001	ref
Male	165.5 ± 2.4	140.1 ± 2	25.3 (19.3 to 31.4)	<0.001	0.42
Years in practice					
≤10	95.0 ± 5.0	78.1 ± 3.8	16.8 (4.5 to 29.1)	0.01	ref
11-20	136.8 ± 3.8	113.7 ± 3.2	23.0 (13.3 to 32.8)	<0.001	0.49
21-30	164.5 ± 3.6	141.4 ± 3.1	23.1 (13.8 to 32.3)	<0.001	0.48
>30	178.9 ± 3.5	151.0 ± 3.0	27.8 (18.7 to 37.0)	<0.001	0.21
Medical school attended					
Top-20	104.7 ± 5.6	83.9 ± 4.7	20.8 (6.4 to 35.2)	0.004	ref
Ranked 21-50	145.9 ± 5.1	114.4 ± 3.7	31.6 (19.2 to 43.9)	<0.001	0.36
Other schools	159.8 ± 2.3	136.7 ± 1.9	23.1 (17.3 to 28.9)	<0.001	0.82
Specialty					
Primary care	206.7 ± 2.5	171.6 ± 1.8	35.2 (29.1 to 41.2)	<0.001	Ref
Surgery	43.6 ± 3.1	35.5 ± 1.6	8.1 (1.4 to 14.8)	0.02	0.001
Specialist	119.9 ± 3.7	105.8 ± 3.6	14.0 (3.8 to 24.2)	0.01	<0.001
Received in 2015					
Yes	176.0 ± 3.0	161.5 ± 2.8	14.4 (6.3 to 22.5)	<0.001	ref
No	136.3 ± 2.6	104.6 ± 1.9	31.7 (25.5 to 37.9)	<0.001	0.001

Supplementary Table B. Comparison of the mean number of opioid prescriptions and expenditure due to opioid prescriptions in 2017 using negative binomial regression model additionally adjusting for physician characteristics and relationships with industry.

	Physicians who received opioid-related industry payments in 2016	Physicians who did not receive opioid-related industry payments in 2016	P-value
Mean Number of Opioid Prescriptions in 2017			
Mean (95% CI)	150.8 (148.1 to 153.4)	128.7 (126.5 to 130.9)	<0.001
Relative ratio (95% CI)	1.17 (1.15 to 1.20)		
Mean Annual Expenditures for Opioid prescriptions in 2017			
Mean (95% CI)	\$11001 (10753 to 11250)	\$7829 (7638 to 8021)	<0.001
Relative ratio (95% CI)	1.41 (1.38 to 1.43)		

Supplementary Table C. Comparison of the mean number of opioid prescriptions and expenditure due to opioid prescriptions in 2017 using ordinary least squares (OLS) regression model additionally adjusting for physician characteristics and relationships with industry.

	Physicians who received opioid-related industry payments in 2016	Physicians who did not receive opioid-related industry payments in 2016	P-value
Mean Number of Opioid Prescriptions in 2017			
Mean (95% CI)	154.3 (151.5 to 157.1)	129.2 (126.4 to 132.0)	<0.001
Difference (95% CI)	25.1 (21.1 to 29.1)		
Mean Annual Expenditures for Opioid prescriptions in 2017			
Mean (95% CI)	\$10574 (10154 to 10993)	\$6885 (6465 to 7304)	<0.001
Difference (95% CI)	\$3689 (3095 to 4283)		

Supplementary Table D. Comparison of the mean number of opioid prescriptions and expenditure due to opioid prescriptions in 2017 according to the receipt of opioid-related industry payments in 2016 among physicians who did not prescribe opioids in 2015.

	Physicians who received opioid-related industry payments in 2016	Physicians who did not receive opioid-related industry payments in 2016	P-value
Mean Number of Opioid Prescriptions in 2017			
Mean (95% CI)	15.8 (12.8 to 18.8)	7.4 (5.9 to 8.9)	<0.001
Difference (95% CI)	8.4 (5.0 to 11.8)		
Mean Annual Expenditures for Opioid prescriptions in 2017			
Mean (95% CI)	\$1318 (947 to 1689)	\$410 (249 to 572)	<0.001
Difference (95% CI)	\$908 (497 to 1318)		

Supplementary Table E. Comparison of the mean number of opioid prescriptions and expenditure due to opioid prescriptions in 2017 for Medicare beneficiaries aged 65 years or older according to the receipt of opioid-related industry payments in 2016.

	Physicians who received opioid-related industry payments in 2016	Physicians who did not receive opioid-related industry payments in 2016	P-value
Mean Number of Opioid Prescriptions in 2017			
Mean (95% CI)	74.9 (73.0 to 76.8)	65.4 (63.7 to 67.1)	<0.001
Difference (95% CI)	9.5 (7.0 to 12.0)		
Mean Annual Expenditures for Opioid prescriptions in 2017			
Mean (95% CI)	\$3445 (3270 to 3619)	\$2450 (2336 to 2565)	<0.001
Difference (95% CI)	\$994 (785 to 1203)		

Supplementary Figure A: Dose-response relationship between the total amount of opioid-related industry payments received in 2016 and the number of opioid prescriptions in 2017 without adjusting for the number of opioid prescriptions in 2016.

