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Table 4: Associations between industry exposure and prescribing: key results.

First author, year	Drug(s)	Payments and prescribing	Association*	Authors' conclusions	Summary finding
Prostate Cancer					
Bandari 2017 (Urol Pract) (27)	**Denosumab**	- Industry payments associated with higher prescription costs ($69,620 vs $60,732, p<0.001). - Total industry payments per physician correlated with higher prescription costs (ρ=0.10, p=0.003).	Positive	Weak association between payments and prescribing.	Payments have a positive or neutral association with prescriptions for prostate cancer
Bandari 2017 (Cancer) (38)	**Enzalutamide**	- total payment per oncologist associated with total number of prescriptions (ρ=0.31, p<0.01), - number of payments to oncologists higher for prescribers than non-prescribers (median (IQR) 3 (2-8) vs 2 (1-3), p<0.01, median total payment (IQR) $59 (25-143) vs $31 (17-65), p<0.01).	Positive	Positive correlation noted between industry payments and prescriptions of enzalutamide.	
	Abiraterone	- total payment per oncologist not associated with number of prescriptions (ρ=0.06, p=0.15). - number of payments to oncologists higher for prescribers than non-prescribers (median 3 (IQR 1-5) vs 2 (IQR 1-4), p<0.01), median total payment amount (IQR) $72 (26-114) vs $56 (22-106), p<0.01)	Positive (number of payments) / Neutral (total payment amount)	Correlation between number of payments and prescriptions of abiraterone, but not total payment amount	
Mitchell 2019 (Oncologist) (41)	**Enzalutamide and abiraterone**	- No relationship between general payments and prescriptions for prostate cancer (RR 0.97, 95% CI 0.93–1.02).	Neutral	Null finding for prostate cancer drugs	
Renal Cell Cancer					
Mitchell 2019 (Oncologist) (41)	**Axitinib, everolimus, pazopanib, sorafenib and sunitinib**	- For US physicians who received general payments in all three investigated years, high rates of prescribing that manufacturer's drugs in renal cell cancer (RR 1.81, 95% CI 1.58–2.07)	Positive	The strongest association between payments and prescriptions exists for physicians who receive payments consistently.	General payments have a positive or neutral association with prescriptions for renal cell cancer
Mitchell 2018 (JAMA Internal Med) (43)	**Sunitinib, pazopanib and sorafenib**	Odds of prescribing drug for renal cell cancer from manufacturer providing payment: - OR 1.84 (95% CI 1.25-2.70, p=0.02) for research payments (n=32 (9.0%)) - OR 2.05 (95% CI 1.34-3.14, p=0.001) for general payments (n=89 (25.1%)) - Combined OR 1.84 (95% CI 1.25-2.70, p=0.002).	Positive	For one drug assessed, payments associated with increased prescribing	
	Sunitinib	General payments associated with more prescribing of sunitinib (50.5% vs 34.4%, p=0.01),	Positive		
	Pazopanib	No association between payments and prescribing	Neutral		
	Sorafenib	No association between payments and prescribing	Neutral		
Chronic myeloid leukaemia					
Mitchell 2019	**Dasatinib, imatinib and nilotinib**	- For US physicians who received general payments in all three investigated years, high rates of	Positive	The strongest association between	General payments generally have a positive association

(Oncologist) (41)		prescribing that manufacturer's drugs in chronic myeloid leukaemia (RR 1.22, 95% CI 1.08–1.39)		payments and prescriptions exists for physicians who receive payments consistently.	with prescriptions for chronic myeloid leukaemia.
Mitchell 2018 (JAMA Internal Med) (43)	**Dasatinib, imatinib and nilotinib**	Odds of prescribing drug for chronic myeloid leukaemia from manufacturer providing payment: - OR 1.16 (95% CI 0.89-1.53, p=0.27) for research payments (n=38 (3.8%)) - OR 1.29 (95% CI 1.13-1.47, p<0.001) for general payments (n=879 (39.5%)) - Combined OR 1.31 (95% CI 1.14-1.48 p<0.001).	Positive	For two drugs assessed, general payments associated with increased prescribing. For one drug, a negative association may explained by the introduction and promotion of newer agents at the time.	
	Dasatinib	General payments associated with more prescribing of dasatinib (13.8% vs 11.4%, p=0.02).	Positive		
	Nilotinib	General payments associated with more prescribing of nilotinib (15.4% vs 12.5%, p=0.01).	Positive		
	Imatinib	General payments associated with less prescribing of imatinib (72.4% vs 75.5%, p=0.02).	Negative		
Lung cancer					
Mitchell 2019 (Oncologist) (41)	**Afatinib and erlotinib**	- For US physicians who received general payments in all three investigated years, high rates of prescribing that manufacturer's drugs in lung cancer (RR 1.69, 95% CI 1.58–1.82).	Positive	The strongest association between payments and prescriptions exists for physicians who receive payments consistently.	General payments have a positive association with prescriptions for lung cancer
Opioids					
Eisenberg 2020 (40)	**All opioids**	- For oncologists specifically, the introduction of any of four policy changes results in 1% fewer days prescribing opioids (% difference −0.935 [SE 0.1320])	Positive	Conflict of interest policies can reduce inappropriate opioid prescribing.	Payments generally have a positive association with opioid prescriptions, and changes to institutional policies can improve opioid prescribing practice
Hadland 2018 (42)	**All opioids**	- Of the 8,053 US haematologist/oncologists who prescribed opioids in 2015, 832 (10.3%) received ≥1 opioid-related industry payment in 2014, totalling $432,345. - Haematologist/oncologist individuals who received no payments had a mean 108 (SD 127) opioid claims in 2015, compared to a mean of 165 (SD 183) claims for individuals who received ≥1 payment. - Difference in claims attributable to receiving any payment calculated as 3.4% (95% CI 0.6-6.2%).	Positive	Results add to previous studies demonstrating the effect of payments on prescribing.	
Hollander 2019 (44)	**All opioids**	- Haematologist-Oncologists who accepted $100 or more in opioid-related gifts were more likely to be in the highest quartile of opioid prescribing the next year	Positive	Larger gifts are related to an increased likelihood of	

		than those who received nothing (aOR 1.46 [CI 1.03–2.07]).		prescribing opioids.	
Zezza 2018 (39)	**All opioids**	For oncology opioid prescriber subgroups investigated (oncologists receiving payments vs comparison oncologists): Cohort 1: Mean expenditures for opioids (annual): $10,285 (2013), $18,723 (2014/15) vs $9,963 (2013), $10,545 (2014/15). DiD $7,856, SE 3,542, p=0.0266. Mean daily doses: 2,945 (2013), 3,245 (2014/15) vs 2,732 (2013), 2,779 (2014/15). DiD $253, SE 104, p=0.0149. Mean daily dose expenditure: $3.35 (2013), $5.76 (2014/15) vs $3.55 (2013), $3.71 (2014/15). DiD $2.24, SE 0.77, p=0.0036. Cohort 2: Mean expenditures: $9,355 (2013/14), $11,477 (2015) vs $8,764 (2013/14), $9,608 (2015). DiD $1,278, SE 1,053, p=0.2248. Mean daily doses: 2,582 (2013/14), 2,734 (2015) vs 2,476 (2013/14), 2,518 (2015). DiD 110, SE 62 p=0.0749. Mean daily dose expenditure: $3.66 (2013/14), $4.28 (2015), $3.48 (2013/14), $3.68 (2015). DiD $0.42, SE 0.51, p=0.4169.	Positive	Payments from industry influence opioid prescribing.	
All prescriptions					
Perlis 2016 (26)	**All drugs**	- Prescribing costs increased linearly with quintiles of payments (p<0.0001) [range: Q1 = $90.36; SE: 110.35 to Q5 = $1803.23; SE: 11.37] and compared with no payment.	Positive	Payments associated with higher prescribing costs and more frequent branded prescribing.	Payments have a positive association with cancer drug prescriptions
Abbreviations: IQR: interquartile range; RR: relative risk; CI: confidence interval; SD: standard deviation; OR: odds ratio; DiD: difference in differences.					
**** Note:*** **Positive** ***= payments associated with more prescribing;*** **Negative** ***= payments associated with less prescribing;*** **Neutral** ***= no statistically significant association between payments and prescribing.***					