Supplementary appendix 1.
Details on the outcomes of interest

	Outcomes of interest	Calculation	Comments
	Amount reimbursed for drug prescriptions/visit (€)	Cost of all drugs prescribed by a GP, dispensed and reimbursed to the patient by the National Health Insurance, over number of visits by the GP (€)	Controlling prescription cost is a major issue for the French National Health Insurance because drugs represent 16.1% of health expenditure in France.[1]
11 indicators used for the performance-related financial incentives programme[2]	Antibiotics to 16-65-year-old (%)	Number of antibiotic prescriptions to 16-65-year-old patients without chronic disease relative to the total number of 16-65-year-old patients without chronic disease (%)	In France, antibiotic use for human health continues to increase, and is among the highest in Europe. In 2015, in France, 5500 deaths were attributed to multi-resistant bacterial infections.[3]
	Benzodiazepines >12 weeks (%)	Number of patients with a new prescription of benzodiazepines for more than 12 weeks relative to the total number of patients (%)	In France, benzodiazepines are marketed for ≤12-week use only. Side effects include memory disorders, falls, fractures, addiction, etc.[4–6]
	Benzodiazepines to >65-year-old (%)	Number of >65-year-old patients with one or more prescriptions of benzodiazepines with long half-life relative to the total number of >65-year-old patients (%)	
	Vasodilators to >65-year-old (%)	Number of >65-year-old patients with one or more prescriptions of vasodilators relative to the total number of >65-year-old patients (%)	A number of drugs are marketed in France as "vasodilators" (naftidrofuryl, piracetam, nicorandil, etc.) for use in different situations. No evidence justifies their utilization, whereas they have or are suspected to have side effects (headache, diarrhoea, severe hepatic cytolysis, etc.).[7]
	Angiotensin converting enzyme (ACE) inhibitors/ACE inhibitors + sartans (%)	Number of ACE inhibitors items prescribed relative to the total number of ACE inhibitors and sartans items prescribed (%)	There is no significant difference in the efficacy between these drug classes. Side effects of sartans differ slightly from those of ACE inhibitors. Sartans are more expensive.[8]
	Antiplatelets (%)	Number of patients with low-dose aspirin prescriptions relative to the total number of patients treated with antiplatelets (%)	Low-dose aspirin is recognized as the best drug treatment for secondary prevention of atherosclerosis.[9]
	Generic antibiotics (%)	Number of antibiotic items prescribed as generic drugs relative to the total number of antibiotic items prescribed (%)	Generic drugs play an important role in controlling health costs.[10]
	Generic antidepressants (%)	Number of antidepressant items prescribed as generic drugs relative to the total number of antidepressant items prescribed (%)	
	Generic antihypertensives (%)	Number of antihypertensive items prescribed as generic drugs relative to the total number of antihypertensive items prescribed (%)	
	Generic proton pump inhibitors (PPIs) (%)	Number of PPI items prescribed as generic drugs relative to the total number of PPI items prescribed (%)	
	Generic statins (%)	Number of statin items prescribed as generic drugs relative to the total number of statin items prescribed (%)	

Data for the patients registered with each GP in 2016."Drugs prescribed" means drugs prescribed by each GP, delivered and reimbursed by the French National Health Insurance. GP=general practitioner

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Supplementary appendix 2.
Selection of the different GP groups

Study groups According to the monetary amount of gifts received by pharmaceutical companies	**No gift**	**Pre-2016 gift**	**€10-€69**	**€70-€239**	**€240-€999**	**≥€1000**	**TOTAL**
GPs matched in National Council of the College of Physicians list and in Transparency in Healthcare database	**8832 (100%)**	**11 192 (100%)**	**9660 (100%)**	**10 135 (100%)**	**9894 (100%)**	**4050 (100%)**	**53 763 (100%)**
Failed to match name and postal code with National Health Data System	1452 (16.4%)	590 (5.3%)	504 (5.2%)	425 (4.2%)	265 (2.7%)	102 (2.5%)	3338 (6.2%)
Excluded from analysis	2355 (26.7%)	1882 (16.8%)	1689 (17.5%)	1478 (14.6%)	1126 (11.4%)	638 (15.8%)	9168 (17.1%)
GPs included in analysis	5025 (56.9%)	8720 (77.9%)	7467 (77.3%)	8232 (81.2%)	8503 (85.9%)	3310 (81.7%)	41 257 (76.7%)

GP=general practitioner

Supplementary appendix 3.
GPs and patients' characteristics

	Covariates	Study groups							P values
		No gift n=5025	Pre-2016 gift n=8720	€10-€69 n=7467	€70-€239 n=8232	€240-€999 n=8503	≥€1000 n=3310	All n=41 257	
GPs	Male (n,%)	3201 (63.7)	5634 (64.6)	4516 (60.5)	5044 (61.3)	5686 (66.9)	2533 (76.5)	26 614 (64.5)	**<0.001**
	Female (n,%)	1823 (36.3)	3086 (35.4)	2951 (39.5)	3188 (38.7)	2817 (33.1)	777 (23.5)	14 642 (35.5)	**<0.001**
	Age	53.6 ± 11.4	54.1 ± 10.2	52.8 ± 10.5	52.2 ± 10.4	53.8 ± 9.6	56.0 ± 8.4	53.5 ± 10.2	**<0.001**
	City <2000 inhabitants (n,%)	1422 (28.3)	2527 (29.0)	2391 (32.0)	2885 (35.0)	2719 (32.0)	913 (27.6)	12 857 (31.2)	**<0.001**
	City ≥2000 inhabitants (n,%)	3567 (71.0)	6115 (70.1)	5032 (67.4)	5290 (64.3)	5730 (67.4)	2377 (71.8)	28 111 (68.1)	**<0.001**
	Number of visits	4623 ± 2525	5184 ± 2579	5250 ± 2485	5437 ± 2457	5688 ± 2327	6140 ± 2577	5359 ± 2510	**<0.001**
	Number of registered patients	1006 ± 611	1136 ± 596	1150 ± 575	1214 ± 541	1260 ± 540	1293 ± 586	1177 ± 577	**<0.001**
Patients	0 to 15-year-old (%)	20 ± 8.4	20.3 ± 7.7	20.9 ± 7.5	21.1 ± 7.0	20.4 ± 6.6	20.0 ± 6.8	20.5 ± 7.3	**<0.001**
	16 to 59-year-old (%)	53.5 ± 8.7	53.4 ± 8.1	53.0 ± 7.6	52.7 ± 7.1	52.9 ± 7.0	53.7 ± 7.2	53.1 ± 7.6	**<0.001**
	60 to 69-year-old (%)	12.4 ± 5.0	12.2 ± 4.4	12.1 ± 4.3	12.1 ± 4.0	12.2 ± 3.7	12.1 ± 3.6	12.2 ± 4.2	**<0.001**
	≥70-year-old (%)	14.1 ± 8.2	14.1 ± 7.5	13.9 ± 7.2	14.0 ± 6.8	14.6 ± 6.9	14.3 ± 7.1	14.2 ± 7.2	**<0.001**
	Medical fee exemption due to low income (%)	9.7 ± 10.5	9.6 ± 10.2	9.1 ± 9.3	9.1 ± 9.0	9.1 ± 8.7	10.8 ± 10.1	9.4 ± 9.6	**<0.001**
	Chronic disease condition (%)	28.8 ± 11.2	28.8 ± 10.7	28.2 ± 10.2	28.4 ± 9.7	28.8 ± 9.6	30.4 ± 10.1	28.7 ± 10.3	**<0.001**

Values are numbers (percentages) for qualitative variables and means ± standard deviations for quantitative variables.
Qualitative data were compared with the χ^2 test and quantitative data by analysis of variance.
Missing data <1%.
Data for the year 2016. "City" means the city where the practice is located.
GPs=general practitioners

Supplementary appendix 4.
Comparison of explanatory variables in the different GP groups with the no gift group by multivariate analysis

Outcomes	Study groups				
	Pre-2016 gift	**€10-€69**	**€70-€239**	**€240-€999**	**≥€1000**
Amount reimbursed for drug prescriptions/visit (€)	1.20 (-0.11 to 2.50) 0.003	2.11 (0.76 to 3.46) **<0.001**	2.73 (1.40 to 4.06) **<0.001**	3.88 (2.55 to 5.20) **<0.001**	5.33 (3.66 to 6.99) **<0.001**
Antibiotics 16-65-year-old (%)	-1.10 (-2.36 to 0.15) 0.004	-0.26 (-1.56 to 1.03) 0.50	-0.01 (-1.28 to 1.26) 0.97	0.11 (-1.16 to 1.38) 0.78	1.18 (-0.41 to 2.78) 0.01
Benzodiazepines >12 weeks (%)	0.12 (-0.33 to 0.56) 0.38	0.36 (-0.09 to 0.82) 0.009	0.41 (-0.04 to 0.86) 0.003	0.68 (0.23 to 1.13) **<0.001**	0.58 (0.02 to 1.14) **<0.001**
Benzodiazepines >65-year-old (%)	-0.30 (-0.64 to 0.05) 0.005	-0.28 (-0.64 to 0.07) 0.009	-0.15 (-0.50 to 0.19) 0.15	-0.08 (-0.43 to 0.26) 0.42	0.05 (-0.38 to 0.49) 0.69
Vasodilators >65-year-old (%)	0.01 (-0.09 to 0.11) 0.71	0.05 (-0.05 to 0.16) 0.09	0.09 (-0.01 to 0.19) 0.003	0.10 (0.00 to 0.20) **<0.001**	0.15 (0.03 to 0.28) **<0.001**
ACE inhibitors/ACE inhibitors + sartans (%)	-0.38 (-1.21 to 0.45) 0.13	-0.36 (-1.21 to 0.49) 0.17	-0.12 (-0.96 to 0.72) 0.63	-0.70 (-1.53 to 0.13) 0.006	-1.67 (-2.71 to -0.62) **<0.001**
Generic antibiotics (%)	-0.66 (-1.22 to -0.10) **<0.001**	-0.87 (-1.45 to -0.30) **<0.001**	-1.24 (-1.81 to -0.67) **<0.001**	-1.83 (-2.40 to -1.27) **<0.001**	-2.17 (-2.88 to -1.47) **<0.001**
Generic antihypertensives (%)	-0.60 (-1.01 to -0.18) **<0.001**	-1.01 (-1.43 to -0.58) **<0.001**	-1.51 (-1.93 to -1.08) **<0.001**	-2.61 (-3.03 to -2.19) **<0.001**	-4.24 (-4.77 to -3.72) **<0.001**
Generic statins (%)	-2.76 (-3.65 to -1.88) **<0.001**	-4.35 (-5.27 to -3.44) **<0.001**	-5.83 (-6.73 to -4.94) **<0.001**	-8.36 (-9.25 to -7.46) **<0.001**	-12.14 (-13.26 to -11.03) **<0.001**

Values are adjusted mean differences (99.9% confidence intervals) and P values.

Threshold P=0.001 (Bonferroni correction for P= 0.05/(9X5)=0.0011). GP=general practitioner. ACE=angiotensin converting enzyme

Supplementary appendix 5.
Results of the adjusted analyses in which the different GP groups were replaced by the median amount of gifts for each group. The no gift group and pre-2016 gift group were grouped together as having received no gift in 2016.

Outcomes	Beta coefficients	Standard errors	P values
Amount reimbursed for drug prescriptions/visit (€)	0.00280	0.00026082	<**0.001**
Antibiotics 16-65-year-old (%)	0.00148	0.00020137	<**0.001**
Benzodiazepines >12 weeks (%)	0.00032194	0.00008757	<**0.001**
Benzodiazepines >65-year-old (%)	0.00018198	0.00006808	0.008
Vasodilators >65-year-old (%)	0.00008536	0.00001969	<**0.001**
ACE inhibitors/ACE inhibitors + sartans (%)	-0.00092337	0.00016228	<**0.001**
Antiplatelets (%)	-0.00022872	0.00010071	0.02
Generic antibiotics (%)	-0.00113	0.00011024	<**0.001**
Generic antidepressants (%)	-0.00013475	0.00009769	0.17
Generic antihypertensives (%)	-0.00247	0.00008188	<**0.001**
Generic PPIs (%)	0.00001348	0.00000872	0.12
Generic statins (%)	-0.00640	0.00017385	<**0.001**

GP=general practitioner. ACE=angiotensin converting enzyme. PPIs=proton pump inhibitors