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**Table S1: Comorbidity<sup>†</sup> adjusted signals: exposure any prescription**

Cancer	Medicine	No. (%) cases	No. (%) controls	OR (95%CI)	p-value	Median ††	Low use v non-use: OR (95%CI)	High use v non-use: OR (95%CI)
<b>Signals associated with increased cancer risk</b>								
Breast §	estrogen-HRT	2,524(20.6%)	10,619(18.6%)	1.26(1.19,1.33)	<0.001	7	1.15(1.07,1.23)	1.41(1.30,1.52)
Breast §	metronidazole*	188(1.5%)	745(1.3%)	1.25(1.06,1.48)	0.007	1	1.24(1.01,1.52)	1.29(0.98,1.69)
Breast §	progestogen-HRT	2,339(19.1%)	9,706(17.0%)	1.28(1.21,1.35)	<0.001	4	1.07(1.00,1.16)	1.51(1.40,1.62)
Lung	amoxicillin	4,380(46.2%)	15,145(36.5%)	1.40(1.33,1.48)	<0.001	2	1.32(1.24,1.40)	1.62(1.50,1.75)
Lung	azathioprine	66(0.7%)	165(0.4%)	1.56(1.14,2.13)	0.005	11	1.08(0.66,1.75)	2.09(1.39,3.14)
Lung	cimetidine	880(9.3%)	2,685(6.5%)	1.39(1.27,1.51)	<0.001	4	1.30(1.16,1.47)	1.48(1.31,1.66)
Lung	clarithromycin	1,108(11.7%)	3,083(7.4%)	1.34(1.23,1.46)	<0.001	1	1.34(1.21,1.47)	1.35(1.18,1.55)
Lung	codeine	3,510(37.0%)	12,131(29.3%)	1.31(1.24,1.38)	<0.001	3	1.28(1.20,1.37)	1.33(1.24,1.43)
Lung	dihydrocodeine	1,833(19.3%)	5,911(14.3%)	1.29(1.21,1.38)	<0.001	2	1.22(1.12,1.33)	1.37(1.25,1.49)
Lung	folic acid §	273(6.5%)	719(3.8%)	1.49(1.27,1.75)	<0.001	6	1.37(1.11,1.70)	1.64(1.31,2.06)
Lung	ipratropium*	1,086(11.4%)	1,658(4.0%)	1.58(1.43,1.74)	<0.001	8	1.40(1.23,1.59)	1.77(1.56,2.02)
Lung	nitrazepam	231(2.4%)	624(1.5%)	1.35(1.14,1.60)	<0.001	10	1.17(0.91,1.50)	1.52(1.22,1.91)
Lung	nystatin	429(4.5%)	1,117(2.7%)	1.27(1.12,1.44)	<0.001	1	1.21(1.04,1.41)	1.40(1.14,1.72)
Lung	paracetamol	5,379(56.7%)	19,230(46.4%)	1.34(1.27,1.42)	<0.001	7	1.31(1.23,1.39)	1.39(1.30,1.48)
Lung	salbutamol*	2,372(25.0%)	5,381(13.0%)	1.44(1.34,1.54)	<0.001	9	1.37(1.26,1.50)	1.52(1.39,1.66)
Lung	salmeterol*	901(9.5%)	1,704(4.1%)	1.34(1.21,1.48)	<0.001	12	1.30(1.14,1.49)	1.37(1.20,1.57)
Lung	tiotropium*	516(5.4%)	593(1.4%)	1.75(1.52,2.02)	<0.001	7	1.73(1.43,2.09)	1.78(1.46,2.16)
Colorectal	allopurinol	298(3.4%)	950(2.5%)	1.27(1.11,1.46)	0.001	17	1.07(0.87,1.32)	1.48(1.23,1.78)
Colorectal	prednisolone*	223(2.6%)	728(1.9%)	1.31(1.12,1.54)	0.001	1	1.31(1.06,1.62)	1.32(1.04,1.66)
Prostate §§	cerivastatin	86(1.2%)	271(0.8%)	1.43(1.10,1.87)	0.008	8	1.17(0.80,1.73)	1.74(1.21,2.50)
Prostate §§	clioquinol*	245(3.3%)	851(2.7%)	1.30(1.11,1.52)	0.001	1	1.23(1.01,1.49)	1.43(1.12,1.83)
Bladder	celecoxib	144(4.5%)	446(3.2%)	1.40(1.14,1.73)	0.002	2	1.30(0.98,1.71)	1.55(1.15,2.09)
Bladder	dexamethasone*	203(6.3%)	677(4.9%)	1.30(1.10,1.54)	0.003	1	1.29(1.03,1.61)	1.32(1.02,1.70)
Bladder	nicotine	152(4.7%)	362(2.6%)	2.04(1.65,2.51)	<0.001	2	1.76(1.35,2.28)	2.65(1.90,3.70)
Bladder	trimethoprim	562(17.4%)	1,388(10.0%)	1.96(1.73,2.21)	<0.001	1	1.81(1.56,2.09)	2.22(1.87,2.65)
Malignant melanoma	chloramphenicol*	230(9.3%)	850(7.5%)	1.28(1.08,1.51)	0.003	1	1.22(1.01,1.48)	1.42(1.08,1.88)
Malignant melanoma	clopidogrel	53(2.2%)	160(1.4%)	1.60(1.13,2.27)	0.008	6	1.31(0.79,2.18)	1.89(1.21,2.96)
Malignant melanoma	flucloxacillin	349(14.2%)	1,317(11.6%)	1.28(1.11,1.46)	<0.001	1	1.24(1.06,1.46)	1.36(1.08,1.71)
Oesophagus	alginic acid	335(13.9%)	995(9.5%)	1.40(1.22,1.62)	<0.001	5	1.26(1.03,1.54)	1.56(1.29,1.89)
Oesophagus	azathioprine	22(0.9%)	36(0.3%)	2.47(1.41,4.35)	0.002	9	2.37(1.06,5.29)	2.58(1.17,5.68)
Oesophagus	cisapride	30(1.2%)	61(0.6%)	2.03(1.27,3.25)	0.003	3	2.00(1.04,3.84)	2.07(1.06,4.03)
Oesophagus	gramacidin*	61(2.5%)	174(1.7%)	1.52(1.11,2.09)	0.008	1	1.52(1.05,2.19)	1.54(0.86,2.76)
Oesophagus	lansoprazole	363(15.1%)	1,192(11.4%)	1.35(1.17,1.55)	<0.001	4	1.10(0.91,1.33)	1.65(1.38,1.98)
Oesophagus	nicotine	97(4.0%)	300(2.9%)	1.50(1.16,1.94)	0.002	2	1.48(1.08,2.02)	1.54(1.03,2.30)
Oesophagus	nystatin	86(3.6%)	230(2.2%)	1.58(1.21,2.06)	0.001	1	1.47(1.05,2.06)	1.78(1.16,2.72)
Oesophagus	nystatin*	191(8.0%)	643(6.1%)	1.29(1.08,1.55)	0.005	1	1.29(1.02,1.63)	1.30(0.99,1.70)
Oesophagus	omeprazole	490(20.4%)	1,596(15.2%)	1.39(1.23,1.57)	<0.001	6	1.26(1.06,1.48)	1.54(1.31,1.81)
Oesophagus	triamcinolone*	88(3.7%)	267(2.6%)	1.47(1.13,1.91)	0.004	1	1.39(0.99,1.93)	1.61(1.07,2.42)
Oesophagus	vitamin B	174(7.2%)	514(4.9%)	1.36(1.12,1.65)	0.002	5	1.20(0.92,1.56)	1.56(1.20,2.04)

Table S1 (cont)

Cancer	Medicine	No. (%) cases	No. (%) controls	OR (95%CI)	p-value	Median ††	Low use v non-use: OR (95%CI)	High use v non-use: OR (95%CI)
Non-Hodgkin's lymphoma	amoxicillin	798(38.4%)	3,040(32.4%)	1.34(1.19,1.50)	<0.001	2	1.28(1.13,1.45)	1.55(1.29,1.85)
Non-Hodgkin's lymphoma	betamethasone*	354(17.0%)	1,209(12.9%)	1.37(1.19,1.57)	<0.001	1	1.27(1.06,1.53)	1.47(1.22,1.78)
Non-Hodgkin's lymphoma	chlorhexidine*	59(2.8%)	142(1.5%)	1.67(1.20,2.31)	0.002	1	1.45(0.97,2.17)	2.21(1.28,3.81)
Non-Hodgkin's lymphoma	clarithromycin	167(8.0%)	586(6.2%)	1.33(1.09,1.63)	0.005	1	1.28(1.02,1.62)	1.45(1.03,2.02)
Non-Hodgkin's lymphoma	clobetasol*	59(2.8%)	151(1.6%)	1.73(1.25,2.38)	0.001	1	1.56(1.01,2.40)	1.96(1.22,3.15)
Non-Hodgkin's lymphoma	erythromycin	248(11.9%)	918(9.8%)	1.26(1.07,1.49)	0.006	1	1.17(0.95,1.43)	1.44(1.12,1.85)
Non-Hodgkin's lymphoma	hydroxyzine	35(1.7%)	81(0.9%)	1.75(1.16,2.66)	0.008	1	1.45(0.82,2.57)	2.22(1.20,4.09)
Non-Hodgkin's lymphoma	methotrexate	19(0.9%)	30(0.3%)	2.93(1.50,5.69)	0.002	11	2.74(1.11,6.78)	3.12(1.28,7.56)
Non-Hodgkin's lymphoma	prednisolone	199(9.6%)	605(6.4%)	1.37(1.13,1.66)	0.001	2	1.31(1.02,1.67)	1.45(1.10,1.91)
Non-Hodgkin's lymphoma	prochlorperazine	176(8.5%)	614(6.5%)	1.30(1.08,1.58)	0.007	1	1.20(0.94,1.53)	1.46(1.11,1.93)
Leukaemia	allopurinol	80(4.0%)	221(2.5%)	1.57(1.20,2.06)	0.001	14	1.38(0.93,2.05)	1.75(1.22,2.52)
Leukaemia	amoxicillin	700(35.0%)	2,743(31.0%)	1.29(1.14,1.45)	<0.001	2	1.27(1.12,1.45)	1.33(1.11,1.60)
Leukaemia	trimethoprim	228(11.4%)	855(9.7%)	1.26(1.06,1.49)	0.010	1	1.10(0.89,1.36)	1.53(1.20,1.97)
Oral (inc. Head,neck & nasal)	codeine	467(31.8%)	1,646(24.5%)	1.29(1.12,1.49)	<0.001	3	1.23(1.04,1.47)	1.37(1.13,1.65)
Oral (inc. Head,neck & nasal)	flucloxacillin	219(14.9%)	793(11.8%)	1.36(1.13,1.62)	0.001	1	1.29(1.05,1.59)	1.52(1.13,2.05)
Oral (inc. Head,neck & nasal)	folic acid §	51(10.9%)	81(3.8%)	2.52(1.64,3.89)	<0.001	4	1.50(0.79,2.82)	4.03(2.27,7.17)
Oral (inc. Head,neck & nasal)	nystatin	68(4.6%)	137(2.0%)	2.06(1.49,2.85)	<0.001	1	1.87(1.26,2.77)	2.50(1.46,4.27)
Oral (inc. Head,neck & nasal)	vitamin B	214(14.6%)	308(4.6%)	2.75(2.22,3.41)	<0.001	4	2.31(1.72,3.11)	3.23(2.43,4.29)
Oral (inc. Head,neck & nasal)	vitamin D	103(7.0%)	213(3.2%)	1.69(1.24,2.30)	0.001	6	1.56(1.06,2.31)	1.85(1.22,2.80)
Stomach	cimetidine	133(9.3%)	411(6.6%)	1.44(1.15,1.79)	0.001	4	1.32(0.98,1.79)	1.56(1.15,2.11)
Stomach	clarithromycin	147(10.3%)	466(7.5%)	1.35(1.08,1.69)	0.009	1	1.25(0.97,1.63)	1.59(1.10,2.29)
Stomach	digoxin	75(5.2%)	216(3.5%)	1.49(1.10,2.01)	0.010	12	1.41(0.93,2.16)	1.56(1.04,2.32)
Stomach	vitamin B	144(10.0%)	308(5.0%)	1.54(1.21,1.95)	<0.001	5	1.54(1.12,2.10)	1.54(1.12,2.13)
Ovary §	phenytoin	14(1.0%)	24(0.4%)	3.24(1.62,6.50)	0.001	27	2.48(0.97,6.31)	4.67(1.62,13.46)
Ovary §	rabeprazole	18(1.3%)	45(0.7%)	2.18(1.22,3.89)	0.009	2	1.93(0.84,4.42)	2.44(1.11,5.36)
Kidney	amoxicillin	541(40.0%)	2,108(34.7%)	1.28(1.11,1.48)	0.001	2	1.20(1.02,1.40)	1.57(1.26,1.94)
Kidney	hydrochlorothiazide	44(3.3%)	90(1.5%)	1.93(1.30,2.86)	0.001	13	1.50(0.86,2.62)	2.50(1.45,4.31)
Kidney	perindopril	63(4.7%)	132(2.2%)	1.63(1.16,2.30)	0.005	10	1.46(0.92,2.32)	1.85(1.15,2.97)
Pancreas	betamethasone*	205(19.2%)	716(15.1%)	1.34(1.11,1.62)	0.003	1	1.19(0.93,1.52)	1.52(1.18,1.96)
Pancreas	nicotine	60(5.6%)	151(3.2%)	1.94(1.38,2.73)	<0.001	2	1.91(1.24,2.94)	1.97(1.18,3.28)
Cervix & other gynae §	dihydrocodeine	136(13.1%)	487(10.1%)	1.39(1.11,1.73)	0.004	2	1.31(0.98,1.74)	1.49(1.10,2.03)
Cervix & other gynae §	ranitidine	109(10.5%)	374(7.7%)	1.37(1.08,1.73)	0.010	3	1.15(0.83,1.60)	1.64(1.18,2.26)
Uterus §	atenolol	236(23.4%)	810(17.2%)	1.39(1.15,1.67)	0.001	17	1.26(0.99,1.60)	1.54(1.21,1.96)
Uterus §	bendroflumethiazide	284(28.1%)	1,064(22.6%)	1.27(1.07,1.51)	0.005	14	1.08(0.86,1.34)	1.53(1.22,1.90)
Uterus §	bisoprolol	41(4.1%)	112(2.4%)	1.82(1.21,2.74)	0.004	15	1.65(0.97,2.80)	2.07(1.16,3.71)
Uterus §	doxazosin	47(4.7%)	121(2.6%)	1.68(1.17,2.43)	0.005	9	1.24(0.73,2.13)	2.23(1.37,3.64)
Uterus §	enalapril	58(5.7%)	149(3.2%)	1.66(1.18,2.33)	0.003	14	1.16(0.69,1.94)	2.23(1.43,3.47)
Uterus §	ibuprofen*	73(7.2%)	221(4.7%)	1.53(1.14,2.06)	0.005	1	1.49(1.04,2.15)	1.60(1.01,2.54)

**Table S1 (cont)**

Cancer	Medicine	No. (%) cases	No. (%) controls	OR (95%CI)	p-value	Median ††	Low use v non-use: OR (95%CI)	High use v non-use: OR (95%CI)
Uterus §	mefenamic acid	53(5.2%)	171(3.6%)	1.72(1.22,2.42)	0.002	1	1.52(0.93,2.47)	1.92(1.22,3.03)
Uterus §	tranexamic acid	39(3.9%)	116(2.5%)	1.87(1.25,2.79)	0.002	1	1.65(0.99,2.76)	2.26(1.23,4.14)
Larynx	benzydamine*	26(3.5%)	50(1.5%)	2.33(1.34,4.04)	0.003	1	1.60(0.81,3.17)	5.09(2.00,12.98)
Larynx	dextropropoxyphene	146(19.7%)	423(12.7%)	1.51(1.19,1.92)	0.001	4	1.43(1.04,1.97)	1.59(1.16,2.17)
Larynx	paracetamol	366(49.4%)	1,255(37.8%)	1.45(1.20,1.76)	<0.001	5	1.41(1.13,1.77)	1.50(1.18,1.92)
Larynx	vitamin B	81(10.9%)	134(4.0%)	2.40(1.72,3.36)	<0.001	6	2.19(1.40,3.40)	2.66(1.68,4.21)
Brain and CNS	carbamazepine	25(3.4%)	61(1.8%)	2.20(1.34,3.62)	0.002	6	1.43(0.69,2.97)	3.37(1.72,6.62)
Myeloma	amoxicillin	227(42.0%)	833(34.8%)	1.53(1.21,1.92)	<0.001	2	1.45(1.13,1.85)	1.77(1.26,2.49)
Myeloma	ciprofloxacin	46(8.5%)	131(5.5%)	1.73(1.17,2.55)	0.006	1	1.72(1.10,2.68)	1.77(0.88,3.55)
Thyroid	gabapentin	7(2.1%)	7(0.4%)	5.13(1.71,15.37)	0.003	2	4.60(1.08,19.56)	5.93(1.12,31.26)
Thyroid	levothyroxine	33(9.7%)	79(4.9%)	2.18(1.37,3.48)	0.001	18	1.57(0.79,3.13)	2.87(1.57,5.24)
Anal	clonidine	9(3.2%)	13(1.0%)	3.87(1.52,9.85)	0.005	2	3.86(1.33,11.22)	3.89(0.57,26.72)
Anal	doxazosin	17(6.1%)	37(2.9%)	2.48(1.27,4.86)	0.008	11	1.68(0.62,4.57)	3.37(1.42,7.97)
<b>Signals associated with decreased cancer risk</b>								
Breast §	trazodone	187(1.5%)	1,042(1.8%)	0.79(0.67,0.93)	0.005	3	0.80(0.64,0.99)	0.78(0.61,0.99)
Lung	fluocinolone*	74(0.8%)	460(1.1%)	0.67(0.52,0.88)	0.003	2	0.70(0.51,0.98)	0.62(0.40,0.96)
Lung	levodopa	35(0.4%)	244(0.6%)	0.50(0.35,0.73)	<0.001	19	0.66(0.41,1.05)	0.34(0.18,0.64)
Lung	nitrofurantoin	110(1.2%)	555(1.3%)	0.74(0.60,0.93)	0.008	1	0.75(0.57,0.98)	0.73(0.51,1.06)
Lung	progestogen-contraceptive §	53(1.3%)	435(2.3%)	0.62(0.45,0.86)	0.004	4	0.70(0.48,1.03)	0.51(0.31,0.85)
Lung	risperidone	27(0.3%)	229(0.6%)	0.55(0.36,0.84)	0.005	9	0.59(0.34,1.02)	0.50(0.27,0.95)
Colorectal	levodopa	40(0.5%)	242(0.6%)	0.60(0.43,0.85)	0.004	22	0.71(0.45,1.11)	0.49(0.29,0.84)
Colorectal	lofepramine	74(0.9%)	421(1.1%)	0.71(0.55,0.92)	0.009	3	0.71(0.50,1.01)	0.71(0.48,1.03)
Colorectal	meloxicam	141(1.6%)	781(2.1%)	0.76(0.63,0.92)	0.005	2	0.78(0.60,1.01)	0.74(0.57,0.97)
Colorectal	metoclopramide	235(2.7%)	1,256(3.3%)	0.78(0.68,0.91)	0.001	1	0.92(0.77,1.11)	0.60(0.47,0.77)
Colorectal	nitrofurantoin	91(1.0%)	482(1.3%)	0.71(0.56,0.91)	0.006	1	0.79(0.60,1.05)	0.58(0.39,0.88)
Prostate §§	levodopa	42(0.6%)	248(0.8%)	0.47(0.30,0.72)	0.001	17	0.53(0.32,0.87)	0.39(0.21,0.73)
Prostate §§	risperidone	12(0.2%)	122(0.4%)	0.37(0.20,0.70)	0.002	8	0.40(0.18,0.89)	0.35(0.13,0.91)
Prostate §§	senna	301(4.0%)	1,378(4.3%)	0.76(0.66,0.87)	<0.001	2	0.87(0.73,1.04)	0.63(0.51,0.78)
Bladder	iron	196(6.1%)	855(6.1%)	0.77(0.64,0.91)	0.003	2	0.84(0.66,1.06)	0.70(0.55,0.89)
Malignant melanoma	dipyridamole	12(0.5%)	105(0.9%)	0.42(0.22,0.80)	0.008	13	0.51(0.23,1.13)	0.31(0.11,0.89)
Malignant melanoma	gliclazide	30(1.2%)	200(1.8%)	0.51(0.32,0.80)	0.004	16	0.57(0.33,1.00)	0.44(0.23,0.85)
Oesophagus	estrogen-HRT §	70(9.0%)	509(15.2%)	0.59(0.43,0.79)	<0.001	8	0.63(0.43,0.93)	0.54(0.36,0.81)
Non-Hodgkin's lymphoma	progestogen-contraceptive §	38(3.6%)	298(6.3%)	0.56(0.36,0.86)	0.008	4	0.64(0.39,1.05)	0.44(0.23,0.85)
Oral (inc. Head,neck & nasal)	doxycycline	32(2.2%)	269(4.0%)	0.45(0.30,0.66)	<0.001	1	0.50(0.32,0.80)	0.33(0.15,0.70)
Oral (inc. Head,neck & nasal)	ispaghula	62(4.2%)	343(5.1%)	0.63(0.47,0.85)	0.002	2	0.72(0.49,1.07)	0.54(0.35,0.83)
Ovary §	loratadine	46(3.2%)	300(4.6%)	0.64(0.46,0.89)	0.008	1	0.71(0.47,1.08)	0.55(0.32,0.93)
Ovary §	progestogen-contraceptive	50(3.5%)	414(6.4%)	0.55(0.39,0.78)	0.001	3	0.64(0.42,0.98)	0.45(0.27,0.74)
Cervix & other gynae §	terbinafine	4(0.4%)	96(2.0%)	0.18(0.07,0.49)	0.001	2	0.23(0.08,0.62)	-

**Table S1 (cont)**

Cancer	Medicine	No. (%) cases	No. (%) controls	OR (95%CI)	p-value	Median ††	Low use v non-use: OR (95%CI)	High use v non-use: OR (95%CI)
Uterus §	estrogen-HRT	169(16.7%)	1,102(23.4%)	0.73(0.60,0.89)	0.002	7	0.76(0.59,0.98)	0.70(0.54,0.92)
Uterus §	progestogen-contraceptive	12(1.2%)	169(3.6%)	0.37(0.19,0.69)	0.002	3	0.41(0.18,0.90)	0.32(0.12,0.82)
Larynx	doxazosin	13(1.8%)	90(2.7%)	0.36(0.19,0.70)	0.002	14	0.49(0.22,1.12)	0.24(0.09,0.69)
Larynx	terbinafine	7(0.9%)	96(2.9%)	0.32(0.14,0.75)	0.009	2	0.44(0.18,1.06)	-

† comorbidities include diabetes, myocardial infarction, coronary heart disease, heart failure, peripheral vascular disease, dementia, cerebrovascular disease, chronic obstructive pulmonary disease, osteoporosis, rheumatological disease, renal disease, liver disease, irritable bowel disease, human immunodeficiency viruses and hemiplegia/paraplegia, plus potential site-specific confounders; OR odds ratio; CI confidence interval; CNS: central nervous system; medicines systemic unless otherwise indicated\* (local); HRT: hormone replacement therapy; § analyses restricted to females only; §§ analyses restricted to males only; low use: patient received more than 1 item of medicine and ≤median number of items; high use: patient received > median number of items of medicine; †† among control users; - no cases with prescription in category

**Table S2: Comorbidity<sup>†</sup> & smoking adjusted signals: exposure any prescription**

Cancer	Medicine	No. (%) cases	No. (%) controls	OR (95%CI)	p-value	Median ††	Low use v non-use: OR (95%CI)	High use v non-use: OR (95%CI)
<b>Signals associated with increased cancer risk</b>								
Breast §	bisoprolol	272(2.8%)	908(2.0%)	1.30(1.11,1.51)	0.001	12	1.28(1.03,1.58)	1.31(1.07,1.62)
Breast §	metronidazole*	176(1.8%)	676(1.5%)	1.26(1.06,1.51)	0.010	1	1.25(1.00,1.56)	1.29(0.97,1.72)
Breast §	progestogen (HRT)	2,050(20.8%)	8,552(19.0%)	1.25(1.17,1.33)	<0.001	4	1.04(0.95,1.13)	1.48(1.37,1.61)
Lung	amoxicillin	4,019(50.6%)	13,729(41.5%)	1.29(1.21,1.37)	<0.001	2	1.22(1.13,1.31)	1.45(1.33,1.58)
Lung	azathioprine	59(0.7%)	144(0.4%)	1.76(1.21,2.57)	0.003	11	1.10(0.61,1.99)	2.50(1.54,4.05)
Lung	cimetidine	786(9.9%)	2,312(7.0%)	1.35(1.22,1.50)	<0.001	4	1.33(1.15,1.53)	1.38(1.20,1.59)
Lung	ipratropium*	992(12.5%)	1,449(4.4%)	1.43(1.27,1.61)	<0.001	8	1.21(1.04,1.41)	1.69(1.45,1.97)
Lung	nitrazepam	206(2.6%)	511(1.5%)	1.34(1.09,1.65)	0.005	10	1.04(0.77,1.41)	1.66(1.27,2.19)
Lung	salbutamol*	2,148(27.0%)	4,807(14.5%)	1.35(1.24,1.47)	<0.001	9	1.28(1.16,1.42)	1.44(1.29,1.60)
Lung	salmeterol*	858(10.8%)	1,570(4.7%)	1.44(1.28,1.62)	<0.001	12	1.37(1.17,1.60)	1.52(1.31,1.78)
Lung	tiotropium*	512(6.4%)	587(1.8%)	1.63(1.39,1.91)	<0.001	7	1.60(1.30,1.96)	1.66(1.34,2.06)
Colorectal	allopurinol	244(3.6%)	787(2.7%)	1.26(1.08,1.48)	0.004	17	1.18(0.93,1.50)	1.33(1.08,1.64)
Prostate §§	alfuzosin	212(3.5%)	451(1.8%)	1.66(1.37,2.01)	<0.001	5	1.65(1.27,2.16)	1.67(1.28,2.18)
Prostate §§	clioquinol*	228(3.8%)	771(3.1%)	1.34(1.13,1.58)	0.001	1	1.29(1.04,1.59)	1.42(1.09,1.85)
Bladder	cefalexin	331(12.7%)	994(9.3%)	1.37(1.17,1.60)	<0.001	1	1.36(1.12,1.65)	1.39(1.10,1.75)
Bladder	ciprofloxacin	260(10.0%)	784(7.3%)	1.40(1.18,1.65)	<0.001	1	1.35(1.11,1.66)	1.47(1.14,1.91)
Bladder	nicotine	147(5.6%)	354(3.3%)	1.54(1.23,1.94)	<0.001	2	1.29(0.97,1.70)	2.13(1.50,3.03)
Bladder	phenoxymethylpenicillin	186(7.1%)	652(6.1%)	1.30(1.08,1.56)	0.006	1	1.22(1.00,1.50)	1.65(1.12,2.42)
Bladder	quinine	206(7.9%)	591(5.5%)	1.28(1.06,1.54)	0.009	4	1.14(0.88,1.47)	1.44(1.12,1.86)
Bladder	ranitidine	392(15.0%)	1,252(11.7%)	1.26(1.10,1.44)	0.001	6	1.20(1.00,1.44)	1.32(1.09,1.59)
Bladder	trimethoprim	506(19.4%)	1,246(11.6%)	1.92(1.68,2.20)	<0.001	1	1.78(1.51,2.09)	2.16(1.79,2.62)
Malignant melanoma	clopidogrel	51(2.7%)	153(1.8%)	1.63(1.13,2.36)	0.009	6	1.36(0.80,2.33)	1.89(1.18,3.03)
Oesophagus	alginic acid	287(15.0%)	844(10.5%)	1.38(1.17,1.63)	<0.001	5	1.23(0.98,1.54)	1.57(1.25,1.96)
Oesophagus	azathioprine	20(1.0%)	30(0.4%)	3.39(1.79,6.42)	<0.001	9	2.69(1.12,6.47)	4.45(1.74,11.41)
Oesophagus	ipratropium*	125(6.6%)	305(3.8%)	1.45(1.11,1.89)	0.006	8	1.40(1.00,1.95)	1.52(1.04,2.22)
Oesophagus	lansoprazole	323(16.9%)	1,069(13.3%)	1.33(1.14,1.55)	<0.001	4	1.08(0.87,1.34)	1.61(1.32,1.97)
Oesophagus	nystatin	83(4.4%)	213(2.7%)	1.65(1.23,2.20)	0.001	1	1.51(1.06,2.16)	1.91(1.21,3.03)
Oesophagus	nystatin*	173(9.1%)	570(7.1%)	1.36(1.12,1.67)	0.002	1	1.35(1.04,1.74)	1.39(1.03,1.87)
Oesophagus	omeprazole	426(22.3%)	1,428(17.8%)	1.29(1.12,1.48)	<0.001	6	1.14(0.95,1.37)	1.46(1.21,1.75)
Non-Hodgkin's lymphoma	betamethasone*	307(18.9%)	1,057(15.0%)	1.26(1.08,1.48)	0.004	1	1.24(1.01,1.52)	1.29(1.05,1.59)
Non-Hodgkin's lymphoma	clobetasol*	51(3.1%)	132(1.9%)	1.72(1.20,2.46)	0.003	1	1.63(0.99,2.69)	1.82(1.10,3.02)
Non-Hodgkin's lymphoma	erythromycin	220(13.6%)	804(11.4%)	1.28(1.07,1.54)	0.008	1	1.16(0.93,1.45)	1.50(1.15,1.97)
Leukaemia	oxybutynin	33(2.3%)	81(1.3%)	1.93(1.21,3.09)	0.006	4	1.23(0.59,2.57)	2.74(1.47,5.10)

Table S2 (cont)

Cancer	Medicine	No. (%) cases	No. (%) controls	OR (95%CI)	p-value	Median ††	Low use v non-use: OR (95%CI)	High use v non-use: OR (95%CI)
Oral (inc. Head,neck & nasal)	clobetasone*	124(10.5%)	440(8.5%)	1.41(1.10,1.81)	0.007	1	1.14(0.83,1.57)	1.90(1.33,2.70)
Oral (inc. Head,neck & nasal)	nystatin	61(5.2%)	129(2.5%)	1.92(1.33,2.77)	0.001	1	1.70(1.09,2.66)	2.44(1.32,4.51)
Oral (inc. Head,neck & nasal)	vitamin B	191(16.2%)	260(5.0%)	2.33(1.82,3.00)	<0.001	4	2.01(1.44,2.82)	2.72(1.93,3.84)
Ovary §	phenytoin	11(1.0%)	19(0.4%)	3.86(1.68,8.89)	0.002	27	3.21(1.02,10.08)	4.81(1.40,16.51)
Stomach	codeine	425(37.2%)	1,509(31.0%)	1.35(1.15,1.59)	<0.001	3	1.34(1.11,1.63)	1.37(1.11,1.69)
Stomach	nicotines*	33(2.9%)	83(1.7%)	2.09(1.29,3.39)	0.003	1	1.95(1.06,3.56)	2.33(1.13,4.79)
Stomach	vitamin B	123(10.8%)	247(5.1%)	1.55(1.18,2.03)	0.002	5	1.45(1.02,2.07)	1.67(1.15,2.44)
Kidney	hydrochlorothiazide	42(3.8%)	80(1.7%)	2.21(1.45,3.37)	<0.001	13	1.82(1.02,3.25)	2.73(1.51,4.97)
Kidney	perindopril	62(5.6%)	122(2.6%)	1.76(1.21,2.54)	0.003	10	1.56(0.93,2.61)	1.97(1.20,3.25)
Pancreas	amoxicillin	429(47.5%)	1,561(41.3%)	1.31(1.09,1.56)	0.003	2	1.31(1.08,1.58)	1.31(1.00,1.71)
Uterus §	chlortalidone	32(3.8%)	68(1.8%)	2.14(1.32,3.49)	0.002	14	2.06(1.01,4.17)	2.22(1.18,4.16)
Uterus §	enalapril	57(6.8%)	129(3.3%)	2.00(1.38,2.92)	<0.001	14	1.34(0.75,2.41)	2.67(1.65,4.31)
Brain and CNS	zinc oxide*	28(4.9%)	63(2.5%)	1.97(1.19,3.27)	0.008	1	1.95(1.01,3.77)	2.00(0.96,4.16)
Larynx	dextropropoxyphene	127(22.1%)	363(14.4%)	1.54(1.14,2.08)	0.004	4	1.44(0.96,2.16)	1.63(1.12,2.38)
Larynx	paracetamol	324(56.3%)	1,088(43.2%)	1.40(1.10,1.79)	0.007	5	1.39(1.05,1.84)	1.43(1.06,1.92)
Larynx	vitamin B	74(12.9%)	117(4.6%)	1.80(1.21,2.68)	0.004	6	1.74(1.05,2.90)	1.87(1.08,3.25)
Myeloma	amoxicillin	202(46.8%)	755(40.3%)	1.44(1.11,1.86)	0.006	2	1.36(1.02,1.80)	1.66(1.14,2.41)
Myeloma	clioquinol*	21(4.9%)	46(2.5%)	2.49(1.30,4.75)	0.006	1	2.19(0.96,4.98)	3.02(1.13,8.03)
Myeloma	paracetamol	245(56.7%)	877(46.8%)	1.51(1.16,1.96)	0.002	6	1.51(1.12,2.02)	1.51(1.09,2.09)
Thyroid	clarithromycin	31(11.4%)	98(7.8%)	2.10(1.28,3.46)	0.003	1	1.62(0.88,2.96)	3.49(1.63,7.49)
Thyroid	flucloxacillin	60(22.1%)	194(15.4%)	1.70(1.16,2.49)	0.006	1	1.60(1.03,2.50)	1.92(1.07,3.44)
Thyroid	folic acid§	13(6.5%)	34(3.6%)	2.77(1.32,5.82)	0.007	1	2.41(0.93,6.27)	3.41(1.08,10.83)
Thyroid	gabapentin	7(2.6%)	7(0.6%)	5.84(1.82,18.79)	0.003	2	4.84(1.12,20.87)	8.16(1.14,58.61)
Thyroid	levothyroxine	28(10.3%)	64(5.1%)	2.21(1.27,3.83)	0.005	18	2.18(0.97,4.90)	2.23(1.12,4.44)
Thyroid	mefenamic acid	19(7.0%)	58(4.6%)	2.30(1.25,4.25)	0.008	1	1.81(0.86,3.80)	3.78(1.44,9.88)
Anal	clonidine	8(3.5%)	11(1.1%)	4.49(1.61,12.50)	0.004	2	3.97(1.26,12.54)	7.32(0.72,74.27)
Anal	doxazosin	17(7.5%)	35(3.6%)	2.76(1.34,5.71)	0.006	11	1.99(0.65,6.11)	3.37(1.40,8.11)
Anal	theophylline	6(2.6%)	7(0.7%)	9.08(1.78,46.43)	0.008	10	9.04(0.65,126.55)	9.11(1.15,71.84)
<b>Signals associated with decreased cancer risk</b>								
Breast §	trazodone	159(1.6%)	949(2.1%)	0.74(0.62,0.89)	0.001	3	0.75(0.60,0.96)	0.72(0.55,0.95)
Lung	fluocinolone*	67(0.8%)	406(1.2%)	0.65(0.48,0.89)	0.007	2	0.70(0.48,1.02)	0.58(0.34,0.98)
Colorectal	metoclopramide	210(3.1%)	1,106(3.8%)	0.77(0.65,0.91)	0.002	1	0.91(0.74,1.11)	0.58(0.44,0.76)
Colorectal	nitrofurantoin	76(1.1%)	430(1.5%)	0.66(0.51,0.87)	0.003	1	0.70(0.51,0.97)	0.59(0.38,0.94)
Prostate §§	levodopa	33(0.6%)	187(0.8%)	0.44(0.26,0.75)	0.003	17	0.50(0.27,0.92)	0.36(0.17,0.76)
Prostate §§	risperidone	9(0.2%)	92(0.4%)	0.38(0.18,0.78)	0.009	8	0.43(0.17,1.12)	0.32(0.11,0.97)
Prostate §§	senna	254(4.3%)	1,150(4.7%)	0.77(0.66,0.90)	0.001	2	0.91(0.75,1.10)	0.61(0.48,0.78)
Bladder	sotalol	5(0.2%)	82(0.8%)	0.19(0.07,0.52)	0.001	13	0.19(0.05,0.82)	0.18(0.04,0.78)
Malignant melanoma	gliclazide	26(1.4%)	184(2.2%)	0.49(0.30,0.80)	0.005	16	0.64(0.35,1.16)	0.34(0.16,0.72)

**Table S2 (cont)**

Cancer	Medicine	No. (%) cases	No. (%) controls	OR (95%CI)	p-value	Median ††	Low use v non-use: OR (95%CI)	High use v non-use: OR (95%CI)
Oesophagus	diazepam	124(6.5%)	644(8.0%)	0.73(0.58,0.91)	0.005	2	0.78(0.60,1.03)	0.64(0.45,0.91)
Oesophagus	estrogen (HRT) §	63(10.4%)	463(17.9%)	0.61(0.44,0.84)	0.003	8	0.62(0.41,0.95)	0.59(0.38,0.91)
Non-Hodgkin's lymphoma	progestogen (cont) §	34(4.0%)	263(7.1%)	0.49(0.30,0.81)	0.005	4	0.56(0.32,0.99)	0.39(0.19,0.82)
Oral (inc. Head,neck & nasal)	doxycycline	28(2.4%)	243(4.7%)	0.43(0.28,0.67)	<0.001	1	0.49(0.29,0.81)	0.32(0.14,0.74)
Ovary §	progestogen (cont)	46(4.1%)	368(7.2%)	0.56(0.38,0.81)	0.003	3	0.63(0.39,1.01)	0.48(0.28,0.81)
Cervix & other gynae §	terbinafine	4(0.5%)	86(2.3%)	0.20(0.07,0.54)	0.002	2	0.25(0.09,0.71)	-
Uterus §	progestogen (cont)	12(1.4%)	158(4.1%)	0.37(0.19,0.71)	0.003	3	0.41(0.18,0.94)	0.33(0.12,0.85)

† comorbidities include diabetes, myocardial infarction, coronary heart disease, heart failure, peripheral vascular disease, dementia, cerebrovascular disease, chronic obstructive pulmonary disease, osteoporosis, rheumatological disease, renal disease, liver disease, irritable bowel disease, human immunodeficiency viruses and hemiplegia/paraplegia, plus potential site-specific confounders; OR odds ratio; CI confidence interval; CNS: central nervous system; medicines systemic unless otherwise indicated\* (local); HRT: hormone replacement therapy; § analyses restricted to females only; §§ analyses restricted to males only; low use: patient received more than 1 item of medicine and ≤median number of items; high use: patient received > median number of items of medicine; †† among control users; - no cases with prescription in category



**Table S3: Comorbidity<sup>†</sup> adjusted signals: exposure >=6 prescriptions**

Cancer	Medicine	No. (%) cases	No. (%) controls	OR (95%CI)	p-value	Median ††	Low use v non-use: OR (95%CI)	High use v non-use: OR (95%CI)
<b>Signals associated with increased cancer risk</b>								
Breast §	estrogen-HRT	1,557(12.7%)	6,040(10.6%)	1.36(1.27,1.45)	<0.001	7	1.15(1.07,1.23)	1.41(1.30,1.52)
Breast §	metronidazole*	16(0.1%)	37(0.1%)	2.21(1.21,4.03)	0.010	1	1.24(1.01,1.52)	1.29(0.98,1.69)
Breast §	progestogen-HRT	1,211(9.9%)	4,226(7.4%)	1.50(1.40,1.62)	<0.001	4	1.07(1.00,1.16)	1.51(1.40,1.62)
Lung	amitriptyline	440(4.6%)	1,415(3.4%)	1.27(1.13,1.43)	<0.001	3	1.15(1.03,1.28)	1.28(1.14,1.43)
Lung	amoxicillin	752(7.9%)	1,690(4.1%)	1.44(1.30,1.60)	<0.001	2	1.32(1.24,1.40)	1.62(1.50,1.75)
Lung	azathioprine	50(0.5%)	105(0.3%)	1.88(1.30,2.70)	0.001	11	1.08(0.66,1.75)	2.09(1.39,3.14)
Lung	cimetidine	423(4.5%)	1,184(2.9%)	1.46(1.29,1.66)	<0.001	4	1.30(1.16,1.47)	1.48(1.31,1.66)
Lung	diazepam	286(3.0%)	841(2.0%)	1.29(1.11,1.50)	0.001	2	1.16(1.04,1.29)	1.22(1.08,1.39)
Lung	dihydrocodeine	720(7.6%)	2,007(4.8%)	1.40(1.27,1.54)	<0.001	2	1.22(1.12,1.33)	1.37(1.25,1.49)
Lung	folic acid §	139(3.3%)	361(1.9%)	1.50(1.21,1.86)	<0.001	6	1.37(1.11,1.70)	1.64(1.31,2.06)
Lung	ipratropium*	713(7.5%)	942(2.3%)	1.63(1.45,1.84)	<0.001	8	1.40(1.23,1.59)	1.77(1.56,2.02)
Lung	nitrazepam	157(1.7%)	360(0.9%)	1.49(1.21,1.84)	<0.001	10	1.17(0.91,1.50)	1.52(1.22,1.91)
Lung	quinine	417(4.4%)	1,061(2.6%)	1.25(1.10,1.42)	0.001	5	1.00(0.87,1.14)	1.25(1.10,1.42)
Lung	salbutamol*	1,592(16.8%)	3,199(7.7%)	1.41(1.30,1.53)	<0.001	9	1.37(1.26,1.50)	1.52(1.39,1.66)
Lung	salmeterol*	659(6.9%)	1,175(2.8%)	1.37(1.22,1.53)	<0.001	12	1.30(1.14,1.49)	1.37(1.20,1.57)
Lung	temazepam	310(3.3%)	835(2.0%)	1.33(1.15,1.54)	<0.001	3	1.08(0.93,1.25)	1.33(1.16,1.53)
Lung	tiotropium*	297(3.1%)	335(0.8%)	1.64(1.37,1.97)	<0.001	7	1.73(1.43,2.09)	1.78(1.46,2.16)
Lung	vitamin D*	76(0.8%)	233(0.6%)	1.45(1.10,1.91)	0.009	3	0.89(0.69,1.15)	1.39(1.09,1.77)
Colorectal	allopurinol	250(2.9%)	743(2.0%)	1.35(1.16,1.57)	<0.001	17	1.07(0.87,1.32)	1.48(1.23,1.78)
Colorectal	aminophylline	43(0.5%)	91(0.2%)	1.93(1.31,2.83)	0.001	10	1.10(0.65,1.86)	1.91(1.24,2.95)
Colorectal	bisacodyl	46(0.5%)	96(0.3%)	1.79(1.24,2.59)	0.002	2	0.84(0.59,1.19)	1.70(1.23,2.35)
Colorectal	dipyridamole	137(1.6%)	390(1.0%)	1.45(1.17,1.80)	0.001	10	1.12(0.87,1.43)	1.41(1.11,1.80)
Colorectal	mesalazine	57(0.7%)	135(0.4%)	1.65(1.18,2.30)	0.003	10	0.91(0.57,1.44)	1.80(1.24,2.60)
Colorectal	perindopril	186(2.1%)	588(1.6%)	1.31(1.10,1.56)	0.003	11	1.17(0.95,1.45)	1.22(0.99,1.51)
Colorectal	phenytoin	46(0.5%)	147(0.4%)	1.58(1.12,2.22)	0.009	25	1.16(0.72,1.85)	1.45(0.94,2.26)
Prostate §§	cerivastatin	60(0.8%)	166(0.5%)	1.59(1.16,2.20)	0.004	8	1.17(0.80,1.73)	1.74(1.21,2.50)
Prostate §§	clioquinol*	24(0.3%)	58(0.2%)	2.06(1.24,3.42)	0.005	1	1.23(1.01,1.49)	1.43(1.12,1.83)
Bladder	amoxicillin	153(4.7%)	448(3.2%)	1.39(1.13,1.72)	0.002	2	1.15(1.04,1.27)	1.50(1.31,1.72)
Bladder	nicotine	17(0.5%)	30(0.2%)	2.59(1.38,4.85)	0.003	2	1.76(1.35,2.28)	2.65(1.90,3.70)
Bladder	trimethoprim	49(1.5%)	116(0.8%)	1.80(1.25,2.58)	0.001	1	1.81(1.56,2.09)	2.22(1.87,2.65)
Malignant melanoma	clopidogrel	34(1.4%)	85(0.8%)	1.86(1.21,2.88)	0.005	6	1.31(0.79,2.18)	1.89(1.21,2.96)
Oesophagus	alginate acid	184(7.7%)	482(4.6%)	1.52(1.26,1.84)	<0.001	5	1.26(1.03,1.54)	1.56(1.29,1.89)
Oesophagus	beclometasone*	186(7.7%)	561(5.4%)	1.37(1.14,1.65)	0.001	4	0.84(0.68,1.03)	1.29(1.07,1.55)
Oesophagus	cisapride	15(0.6%)	22(0.2%)	2.89(1.41,5.92)	0.004	3	2.00(1.04,3.84)	2.07(1.06,4.03)
Oesophagus	lansoprazole	198(8.2%)	519(5.0%)	1.67(1.39,2.01)	<0.001	4	1.10(0.91,1.33)	1.65(1.38,1.98)
Oesophagus	omeprazole	276(11.5%)	812(7.8%)	1.45(1.24,1.69)	<0.001	6	1.26(1.06,1.48)	1.54(1.31,1.81)
Oesophagus	risedronate sodium	16(0.7%)	31(0.3%)	2.54(1.27,5.05)	0.008	7	0.66(0.24,1.81)	3.29(1.61,6.75)

**Table S3 (cont)**

Cancer	Medicine	No. (%) cases	No. (%) controls	OR (95%CI)	p-value	Median ††	Low use v non-use: OR (95%CI)	High use v non-use: OR (95%CI)
Oesophagus	vitamin B	91(3.8%)	229(2.2%)	1.54(1.18,2.01)	0.001	5	1.20(0.92,1.56)	1.56(1.20,2.04)
Oesophagus	warfarin	103(4.3%)	283(2.7%)	1.43(1.11,1.84)	0.005	13	0.95(0.69,1.31)	1.56(1.17,2.08)
Non-Hodgkin's lymphoma	amoxicillin	86(4.1%)	277(2.9%)	1.46(1.12,1.92)	0.006	2	1.28(1.13,1.45)	1.55(1.29,1.85)
Non-Hodgkin's lymphoma	azathioprine	19(0.9%)	27(0.3%)	2.58(1.31,5.08)	0.006	15	1.46(0.60,3.53)	2.87(1.31,6.29)
Non-Hodgkin's lymphoma	gabapentin	16(0.8%)	27(0.3%)	2.86(1.47,5.58)	0.002	3	0.82(0.36,1.87)	2.73(1.48,5.06)
Non-Hodgkin's lymphoma	methotrexate	14(0.7%)	18(0.2%)	3.41(1.57,7.41)	0.002	11	2.74(1.11,6.78)	3.12(1.28,7.56)
Non-Hodgkin's lymphoma	phenoxymethylpenicillin	10(0.5%)	10(0.1%)	3.77(1.51,9.45)	0.005	1	1.20(0.96,1.48)	1.42(0.99,2.04)
Leukaemia	allopurinol	64(3.2%)	166(1.9%)	1.68(1.24,2.27)	0.001	14	1.38(0.93,2.05)	1.75(1.22,2.52)
Leukaemia	oxybutynin	25(1.3%)	46(0.5%)	2.35(1.41,3.92)	0.001	4	1.14(0.65,2.01)	2.19(1.33,3.61)
Leukaemia	oxytetracycline	19(1.0%)	34(0.4%)	2.67(1.49,4.79)	0.001	1	1.10(0.78,1.56)	1.47(0.99,2.19)
Leukaemia	paracetamol	459(23.0%)	1,605(18.2%)	1.26(1.10,1.44)	0.001	5	1.04(0.91,1.19)	1.27(1.10,1.47)
Oral (inc. Head,neck & nasal)	betamethasone*	42(2.9%)	116(1.7%)	1.69(1.15,2.48)	0.007	1	1.02(0.81,1.29)	1.37(1.09,1.72)
Oral (inc. Head,neck & nasal)	folic acid §	31(6.7%)	32(1.5%)	3.79(2.09,6.89)	<0.001	4	1.50(0.79,2.82)	4.03(2.27,7.17)
Oral (inc. Head,neck & nasal)	vitamin A	15(1.0%)	12(0.2%)	3.84(1.68,8.79)	0.001	1	1.07(0.49,2.33)	2.28(1.21,4.28)
Oral (inc. Head,neck & nasal)	vitamin B	121(8.2%)	132(2.0%)	3.09(2.31,4.14)	<0.001	4	2.31(1.72,3.11)	3.23(2.43,4.29)
Oral (inc. Head,neck & nasal)	vitamin C	18(1.2%)	14(0.2%)	4.43(2.05,9.56)	<0.001	2	1.21(0.62,2.34)	2.54(1.31,4.92)
Stomach	cimetidine	63(4.4%)	180(2.9%)	1.52(1.11,2.07)	0.008	4	1.32(0.98,1.79)	1.56(1.15,2.11)
Ovary §	cyclopenthiiazide	13(0.9%)	17(0.3%)	3.31(1.54,7.15)	0.002	12	1.91(0.69,5.33)	3.26(1.20,8.88)
Ovary §	phenytoin	13(0.9%)	19(0.3%)	3.87(1.83,8.18)	<0.001	27	2.48(0.97,6.31)	4.67(1.62,13.46)
Ovary §	vitamin D*	13(0.9%)	24(0.4%)	2.66(1.30,5.45)	0.007	2	0.87(0.42,1.82)	2.53(1.44,4.44)
Kidney	hydrochlorothiazide	39(2.9%)	70(1.2%)	2.26(1.46,3.48)	<0.001	13	1.50(0.86,2.62)	2.50(1.45,4.31)
Kidney	nystatin*	19(1.4%)	34(0.6%)	2.25(1.23,4.13)	0.009	1	0.90(0.66,1.24)	1.22(0.84,1.78)
Kidney	perindopril	45(3.3%)	84(1.4%)	1.87(1.25,2.81)	0.003	10	1.46(0.92,2.32)	1.85(1.15,2.97)
Pancreas	clopidogrel	35(3.3%)	66(1.4%)	2.14(1.34,3.42)	0.001	7	1.05(0.60,1.83)	2.22(1.35,3.66)
Pancreas	hydrochlorothiazide	31(2.9%)	79(1.7%)	1.84(1.16,2.90)	0.009	15	1.26(0.69,2.31)	1.78(1.01,3.15)
Pancreas	metoclopramide	12(1.1%)	16(0.3%)	3.08(1.40,6.76)	0.005	1	1.01(0.62,1.64)	1.85(1.14,3.03)
Pancreas	nicotine	11(1.0%)	13(0.3%)	3.61(1.55,8.43)	0.003	2	1.91(1.24,2.94)	1.97(1.18,3.28)
Cervix & other gynae §	cimetidine	28(2.7%)	68(1.4%)	1.87(1.17,2.98)	0.009	3	1.33(0.89,2.00)	1.61(1.05,2.48)
Uterus §	atenolol	186(18.4%)	610(13.0%)	1.40(1.14,1.71)	0.001	17	1.26(0.99,1.60)	1.54(1.21,1.96)
Uterus §	bendroflumethiazide	212(21.0%)	756(16.1%)	1.33(1.10,1.61)	0.003	14	1.08(0.86,1.34)	1.53(1.22,1.90)
Uterus §	bismuth*	5(0.5%)	4(0.1%)	6.56(1.64,26.17)	0.008	1	0.65(0.36,1.17)	2.37(1.16,4.83)
Uterus §	dextropropoxyphene	103(10.2%)	341(7.3%)	1.43(1.11,1.83)	0.005	3	1.04(0.81,1.34)	1.23(0.96,1.58)
Uterus §	doxazosin	35(3.5%)	72(1.5%)	2.21(1.43,3.43)	<0.001	9	1.24(0.73,2.13)	2.23(1.37,3.64)
Uterus §	enalapril	45(4.5%)	108(2.3%)	1.78(1.21,2.62)	0.003	14	1.16(0.69,1.94)	2.23(1.43,3.47)
Uterus §	losartan potassium	28(2.8%)	66(1.4%)	2.00(1.24,3.23)	0.005	13	1.26(0.68,2.35)	2.05(1.17,3.62)
Uterus §	peru balsam*	5(0.5%)	4(0.1%)	6.56(1.64,26.17)	0.008	1	0.60(0.33,1.10)	2.36(1.16,4.82)
Uterus §	salicylic acid*	7(0.7%)	9(0.2%)	4.31(1.53,12.08)	0.006	1	0.75(0.41,1.38)	1.83(1.02,3.27)
Larynx	cimetidine	38(5.1%)	79(2.4%)	2.12(1.36,3.32)	0.001	4	0.71(0.42,1.20)	1.97(1.27,3.05)

**Table S3 (cont)**

Cancer	Medicine	No. (%) cases	No. (%) controls	OR (95%CI)	p-value	Median ††	Low use v non-use: OR (95%CI)	High use v non-use: OR (95%CI)
Larynx	vitamin B	45(6.1%)	71(2.1%)	2.20(1.41,3.41)	<0.001	6	2.19(1.40,3.40)	2.66(1.68,4.21)
Brain and CNS	carbamazepine	16(2.2%)	31(0.9%)	3.02(1.59,5.71)	0.001	6	1.43(0.69,2.97)	3.37(1.72,6.62)
Myeloma	mometasone*	9(1.7%)	14(0.6%)	3.45(1.40,8.50)	0.007	1	1.25(0.71,2.21)	1.78(1.01,3.15)
Liver	furosemide	96(18.2%)	166(7.1%)	1.98(1.35,2.91)	0.001	12	1.14(0.73,1.78)	1.89(1.22,2.94)
Liver	mometasone*	10(1.9%)	22(0.9%)	3.82(1.42,10.26)	0.008	1	1.15(0.59,2.26)	1.75(0.88,3.44)
Liver	pravastatin	24(4.5%)	47(2.0%)	2.26(1.24,4.11)	0.008	12	1.15(0.45,2.97)	2.66(1.31,5.38)
Thyroid	levothyroxine	30(8.8%)	69(4.3%)	2.30(1.40,3.76)	0.001	18	1.57(0.79,3.13)	2.87(1.57,5.24)
Thyroid	progestogen-HRT §	18(7.1%)	47(3.9%)	2.52(1.33,4.78)	0.005	3	1.18(0.70,2.00)	2.19(1.22,3.94)
Anal	doxazosin	13(4.7%)	23(1.8%)	3.19(1.44,7.06)	0.004	11	1.68(0.62,4.57)	3.37(1.42,7.97)
Anal	nicotine	5(1.8%)	3(0.2%)	9.95(2.22,44.53)	0.003	2	1.21(0.54,2.70)	2.74(1.11,6.75)
<b>Signals associated with decreased cancer risk</b>								
Breast §	carbamazepine	78(0.6%)	494(0.9%)	0.70(0.55,0.90)	0.005	5	1.11(0.91,1.35)	0.70(0.55,0.90)
Breast §	iron	204(1.7%)	1,024(1.8%)	0.78(0.67,0.92)	0.003	2	0.96(0.87,1.06)	0.84(0.74,0.94)
Breast §	prednisolone	176(1.4%)	1,008(1.8%)	0.78(0.66,0.92)	0.004	2	1.02(0.92,1.13)	0.85(0.75,0.97)
Breast §	trimethoprim	91(0.7%)	541(0.9%)	0.72(0.57,0.91)	0.005	1	1.03(0.96,1.11)	0.94(0.85,1.02)
Lung	benzalkonium*	18(0.2%)	118(0.3%)	0.49(0.29,0.83)	0.008	1	1.20(0.98,1.48)	0.71(0.54,0.94)
Lung	dimeticone*	17(0.2%)	119(0.3%)	0.46(0.27,0.80)	0.005	1	1.15(0.93,1.42)	0.75(0.57,0.98)
Lung	levodopa	21(0.2%)	193(0.5%)	0.38(0.24,0.61)	<0.001	19	0.66(0.41,1.05)	0.34(0.18,0.64)
Colorectal	diclofenac	336(3.9%)	1,986(5.2%)	0.71(0.63,0.80)	<0.001	2	0.97(0.90,1.06)	0.84(0.76,0.92)
Colorectal	lactulose	263(3.0%)	1,179(3.1%)	0.78(0.68,0.90)	0.001	3	1.03(0.92,1.15)	0.81(0.71,0.92)
Colorectal	misoprostol	77(0.9%)	453(1.2%)	0.69(0.53,0.88)	0.003	2	0.84(0.70,1.00)	0.81(0.67,0.98)
Colorectal	naproxen	97(1.1%)	572(1.5%)	0.72(0.57,0.89)	0.003	2	0.89(0.76,1.03)	0.78(0.66,0.94)
Colorectal	senna	126(1.5%)	591(1.6%)	0.73(0.60,0.90)	0.003	2	0.97(0.83,1.13)	0.72(0.61,0.86)
Prostate §§	benzalkonium*	8(0.1%)	77(0.2%)	0.36(0.17,0.77)	0.009	1	0.95(0.72,1.25)	0.75(0.53,1.07)
Prostate §§	bumetanide	32(0.4%)	201(0.6%)	0.57(0.38,0.86)	0.007	12	1.05(0.71,1.56)	0.43(0.26,0.73)
Prostate §§	citalopram	49(0.7%)	352(1.1%)	0.59(0.43,0.81)	0.001	5	1.03(0.81,1.30)	0.59(0.43,0.81)
Prostate §§	dimeticone*	8(0.1%)	79(0.2%)	0.36(0.17,0.77)	0.009	1	0.97(0.73,1.28)	0.72(0.50,1.02)
Prostate §§	furosemide	435(5.8%)	2,181(6.8%)	0.70(0.61,0.79)	<0.001	12	0.91(0.80,1.03)	0.69(0.59,0.79)
Prostate §§	iron	92(1.2%)	424(1.3%)	0.72(0.57,0.92)	0.008	3	1.08(0.92,1.27)	0.72(0.58,0.89)
Prostate §§	lactulose	172(2.3%)	819(2.6%)	0.68(0.57,0.81)	<0.001	2	0.93(0.81,1.06)	0.70(0.60,0.82)
Prostate §§	lidocaine*	8(0.1%)	68(0.2%)	0.35(0.16,0.75)	0.007	1	1.15(0.86,1.55)	0.69(0.47,1.00)
Prostate §§	risperidone	5(0.1%)	67(0.2%)	0.27(0.11,0.70)	0.007	8	0.40(0.18,0.89)	0.35(0.13,0.91)
Prostate §§	senna	84(1.1%)	415(1.3%)	0.70(0.55,0.90)	0.005	2	0.87(0.73,1.04)	0.63(0.51,0.78)
Prostate §§	vitamin D	69(0.9%)	378(1.2%)	0.66(0.50,0.88)	0.004	6	1.02(0.80,1.30)	0.69(0.52,0.93)
Bladder	iron	55(1.7%)	263(1.9%)	0.64(0.47,0.88)	0.006	2	0.84(0.66,1.06)	0.70(0.55,0.89)
Bladder	lactulose	108(3.3%)	465(3.3%)	0.73(0.58,0.91)	0.006	2	1.01(0.84,1.21)	0.83(0.69,1.01)

**Table S3 (cont)**

Cancer	Medicine	No. (%) cases	No. (%) controls	OR (95%CI)	p-value	Median ††	Low use v non-use: OR (95%CI)	High use v non-use: OR (95%CI)
<b>Malignant melanoma</b>	<b>gliclazide</b>	22(0.9%)	153(1.4%)	0.51(0.31,0.84)	0.009	16	0.57(0.33,1.00)	0.44(0.23,0.85)
<b>Non-Hodgkin's lymphoma</b>	<b>vitamin B</b>	29(1.4%)	179(1.9%)	0.51(0.34,0.78)	0.002	5	1.06(0.78,1.43)	0.52(0.34,0.79)
<b>Stomach</b>	<b>finasteride §§</b>	11(1.3%)	89(2.5%)	0.41(0.21,0.81)	0.010	10	0.74(0.40,1.36)	0.36(0.16,0.80)
<b>Ovary §</b>	<b>nifedipine</b>	32(2.3%)	216(3.3%)	0.56(0.38,0.83)	0.004	11	0.71(0.48,1.07)	0.64(0.41,0.99)
<b>Ovary §</b>	<b>progestogen-contraceptive</b>	13(0.9%)	140(2.1%)	0.44(0.23,0.81)	0.009	3	0.64(0.42,0.98)	0.45(0.27,0.74)
<b>Uterus §</b>	<b>estrogen-HRT</b>	93(9.2%)	650(13.8%)	0.68(0.53,0.87)	0.002	7	0.76(0.59,0.98)	0.70(0.54,0.92)
<b>Larynx</b>	<b>diclofenac</b>	20(2.7%)	153(4.6%)	0.48(0.29,0.78)	0.003	2	1.12(0.84,1.49)	0.71(0.50,1.00)
<b>Larynx</b>	<b>doxazosin</b>	8(1.1%)	63(1.9%)	0.31(0.14,0.71)	0.006	14	0.49(0.22,1.12)	0.24(0.09,0.69)

† comorbidities include diabetes, myocardial infarction, coronary heart disease, heart failure, peripheral vascular disease, dementia, cerebrovascular disease, chronic obstructive pulmonary disease, osteoporosis, rheumatological disease, renal disease, liver disease, irritable bowel disease, human immunodeficiency viruses and hemiplegia/paraplegia, plus potential site-specific confounders; OR odds ratio; CI confidence interval; CNS: central nervous system; medicines systemic unless otherwise indicated\* (local); HRT: hormone replacement therapy; § analyses restricted to females only; §§ analyses restricted to males only; low use: patient received more than 1 item of medicine and ≤median number of items; high use: patient received > median number of items of medicine; †† among control users; - no cases with ≥6 prescriptions in category

**Table S4: Comorbidity<sup>†</sup> & smoking adjusted signals: exposure  $\geq$ 6 prescriptions**

Cancer	Medicine	No. (%) cases	No. (%) controls	OR (95%CI)	p-value	Median ††	Low use v non-use: OR (95%CI)	High use v non-use: OR (95%CI)
<b>Signals associated with increased cancer risk</b>								
Breast §	estrogen (HRT)	1,368(13.9%)	5,344(11.9%)	1.32(1.23,1.43)	<0.001	7	1.13(1.05,1.23)	1.38(1.27,1.50)
Breast §	metronidazole*	15(0.2%)	32(0.1%)	2.36(1.25,4.46)	0.008	1	1.25(1.00,1.56)	1.29(0.97,1.72)
Breast §	progestogen (HRT)	1,074(10.9%)	3,755(8.4%)	1.48(1.37,1.61)	<0.001	4	1.04(0.95,1.13)	1.48(1.37,1.61)
Lung	amitriptyline	418(5.3%)	1,261(3.8%)	1.25(1.09,1.44)	0.001	3	1.14(1.01,1.29)	1.25(1.10,1.42)
Lung	amoxicillin	722(9.1%)	1,632(4.9%)	1.36(1.21,1.53)	<0.001	2	1.22(1.13,1.31)	1.45(1.33,1.58)
Lung	azathioprine	45(0.6%)	92(0.3%)	2.30(1.49,3.56)	<0.001	11	1.10(0.61,1.99)	2.50(1.54,4.05)
Lung	cimetidine	376(4.7%)	1,005(3.0%)	1.37(1.18,1.58)	<0.001	4	1.33(1.15,1.53)	1.38(1.20,1.59)
Lung	dihydrocodeine	653(8.2%)	1,791(5.4%)	1.28(1.15,1.44)	<0.001	2	1.10(1.00,1.22)	1.20(1.09,1.33)
Lung	fluticasone*	552(6.9%)	1,216(3.7%)	1.41(1.24,1.61)	<0.001	5	1.04(0.90,1.21)	1.42(1.24,1.62)
Lung	ipratropium*	661(8.3%)	816(2.5%)	1.56(1.35,1.79)	<0.001	8	1.21(1.04,1.41)	1.69(1.45,1.97)
Lung	nitrazepam	139(1.7%)	284(0.9%)	1.58(1.22,2.05)	0.001	10	1.04(0.77,1.41)	1.66(1.27,2.19)
Lung	phenoxymethylpenicillin	21(0.3%)	44(0.1%)	2.89(1.52,5.50)	0.001	1	0.99(0.87,1.13)	1.23(0.99,1.54)
Lung	quinine	369(4.6%)	916(2.8%)	1.31(1.13,1.52)	<0.001	5	0.96(0.82,1.13)	1.30(1.12,1.52)
Lung	salbutamol*	1,453(18.3%)	2,854(8.6%)	1.36(1.24,1.50)	<0.001	9	1.28(1.16,1.42)	1.44(1.29,1.60)
Lung	salmeterol*	630(7.9%)	1,104(3.3%)	1.51(1.32,1.72)	<0.001	12	1.37(1.17,1.60)	1.52(1.31,1.78)
Lung	tiotropium*	297(3.7%)	333(1.0%)	1.52(1.25,1.85)	<0.001	7	1.60(1.30,1.96)	1.66(1.34,2.06)
Colorectal	allopurinol	208(3.1%)	628(2.2%)	1.33(1.12,1.59)	0.001	17	1.18(0.93,1.50)	1.33(1.08,1.64)
Colorectal	aminophylline	30(0.4%)	72(0.2%)	1.89(1.17,3.05)	0.009	10	1.26(0.67,2.36)	1.75(1.03,2.96)
Colorectal	dipyridamole	116(1.7%)	336(1.2%)	1.44(1.13,1.83)	0.004	10	1.10(0.82,1.46)	1.40(1.06,1.83)
Colorectal	tiotropium*	77(1.1%)	251(0.9%)	1.49(1.11,1.99)	0.007	7	1.24(0.90,1.71)	1.37(0.99,1.90)
Prostate §§	alfuzosin	103(1.7%)	222(0.9%)	1.63(1.25,2.13)	<0.001	5	1.65(1.27,2.16)	1.67(1.28,2.18)
Prostate §§	atorvastatin	452(7.6%)	1,783(7.3%)	1.25(1.11,1.42)	<0.001	17	1.15(0.98,1.33)	1.30(1.12,1.52)
Prostate §§	clioquinol*	22(0.4%)	48(0.2%)	2.09(1.19,3.66)	0.010	1	1.29(1.04,1.59)	1.42(1.09,1.85)
Bladder	amoxicillin	146(5.6%)	424(4.0%)	1.45(1.16,1.81)	0.001	2	1.09(0.97,1.22)	1.39(1.20,1.61)
Bladder	cefalexin	30(1.2%)	61(0.6%)	1.99(1.23,3.20)	0.005	1	1.36(1.12,1.65)	1.39(1.10,1.75)
Bladder	celecoxib	41(1.6%)	115(1.1%)	1.78(1.20,2.63)	0.004	2	1.18(0.88,1.58)	1.53(1.11,2.10)
Bladder	ranitidine	204(7.8%)	601(5.6%)	1.28(1.07,1.54)	0.008	6	1.20(1.00,1.44)	1.32(1.09,1.59)
Bladder	trimethoprim	48(1.8%)	102(1.0%)	2.04(1.39,3.00)	<0.001	1	1.78(1.51,2.09)	2.16(1.79,2.62)
Oesophagus	alginic acid	152(8.0%)	402(5.0%)	1.53(1.22,1.91)	<0.001	5	1.23(0.98,1.54)	1.57(1.25,1.96)
Oesophagus	azathioprine	14(0.7%)	18(0.2%)	4.15(1.87,9.22)	<0.001	9	2.69(1.12,6.47)	4.45(1.74,11.41)
Oesophagus	lansoprazole	178(9.3%)	472(5.9%)	1.59(1.30,1.95)	<0.001	4	1.08(0.87,1.34)	1.61(1.32,1.97)
Oesophagus	omeprazole	242(12.7%)	719(9.0%)	1.40(1.17,1.66)	<0.001	6	1.14(0.95,1.37)	1.46(1.21,1.75)
Oesophagus	prednisolone	66(3.5%)	164(2.0%)	1.68(1.19,2.38)	0.003	2	1.09(0.84,1.42)	1.52(1.15,2.01)
Oesophagus	risedronate sodium	15(0.8%)	29(0.4%)	2.69(1.28,5.67)	0.009	7	0.45(0.13,1.58)	3.71(1.70,8.10)
Non-Hodgkin's lymphoma	amoxicillin	83(5.1%)	262(3.7%)	1.50(1.13,2.00)	0.006	2	1.18(1.02,1.36)	1.43(1.18,1.74)
Non-Hodgkin's lymphoma	gabapentin	15(0.9%)	27(0.4%)	3.41(1.67,6.96)	0.001	3	0.95(0.41,2.19)	3.08(1.61,5.91)

**Table S4 (cont)**

Cancer	Medicine	No. (%) cases	No. (%) controls	OR (95%CI)	p-value	Median ††	Low use v non-use: OR (95%CI)	High use v non-use: OR (95%CI)
Leukaemia	metoclopramide	16(1.1%)	34(0.5%)	2.61(1.34,5.11)	0.005	1	0.42(0.24,0.73)	1.13(0.69,1.85)
Leukaemia	oxybutynin	21(1.5%)	37(0.6%)	2.69(1.42,5.08)	0.002	4	1.23(0.59,2.57)	2.74(1.47,5.10)
Leukaemia	oxytetracycline	15(1.0%)	26(0.4%)	3.01(1.49,6.07)	0.002	1	1.29(0.87,1.92)	1.52(0.96,2.39)
Leukaemia	paracetamol	382(26.4%)	1,298(20.9%)	1.34(1.14,1.57)	<0.001	5	1.06(0.90,1.25)	1.37(1.15,1.63)
Oral (inc. Head,neck & nasal)	hydrochlorothiazide	17(1.4%)	44(0.9%)	2.56(1.34,4.89)	0.005	8	0.82(0.26,2.62)	3.34(1.68,6.64)
Oral (inc. Head,neck & nasal)	hydrocortisone*	60(5.1%)	172(3.3%)	1.66(1.17,2.35)	0.004	2	0.92(0.76,1.13)	1.18(0.91,1.53)
Oral (inc. Head,neck & nasal)	vitamin B	104(8.8%)	107(2.1%)	2.55(1.79,3.63)	<0.001	4	2.01(1.44,2.82)	2.72(1.93,3.84)
Oral (inc. Head,neck & nasal)	vitamin C	15(1.3%)	11(0.2%)	3.63(1.42,9.25)	0.007	2	0.92(0.46,1.85)	2.49(1.09,5.70)
Ovary §	phenytoin	10(0.9%)	15(0.3%)	4.31(1.74,10.65)	0.002	27	3.21(1.02,10.08)	4.81(1.40,16.51)
Stomach	chlorphenamine	10(0.9%)	10(0.2%)	4.72(1.64,13.56)	0.004	1	1.32(0.83,2.12)	1.45(0.78,2.70)
Kidney	hydrochlorothiazide	37(3.3%)	62(1.3%)	2.61(1.63,4.18)	<0.001	13	1.82(1.02,3.25)	2.73(1.51,4.97)
Kidney	perindopril	44(4.0%)	81(1.7%)	1.94(1.25,2.99)	0.003	10	1.56(0.93,2.61)	1.97(1.20,3.25)
Pancreas	clopidogrel	35(3.9%)	63(1.7%)	2.37(1.45,3.86)	0.001	7	1.02(0.57,1.84)	2.45(1.45,4.13)
Pancreas	lorazepam	10(1.1%)	14(0.4%)	3.59(1.41,9.18)	0.008	12	1.74(0.55,5.49)	4.11(1.43,11.81)
Pancreas	methotrexate	9(1.0%)	9(0.2%)	4.39(1.57,12.26)	0.005	14	1.25(0.32,4.90)	4.66(1.50,14.48)
Pancreas	quinine	46(5.1%)	104(2.7%)	1.78(1.18,2.68)	0.006	5	0.49(0.28,0.86)	1.68(1.11,2.54)
Uterus §	bendroflumethiazide	194(23.1%)	699(18.1%)	1.32(1.07,1.63)	0.009	14	0.99(0.77,1.28)	1.53(1.20,1.95)
Uterus §	doxazosin	33(3.9%)	70(1.8%)	1.88(1.18,3.00)	0.008	9	1.07(0.59,1.94)	1.99(1.19,3.33)
Uterus §	enalapril	45(5.4%)	92(2.4%)	2.35(1.53,3.60)	<0.001	14	1.34(0.75,2.41)	2.67(1.65,4.31)
Uterus §	loperamide	12(1.4%)	30(0.8%)	2.88(1.36,6.09)	0.006	1	1.02(0.64,1.65)	1.35(0.75,2.42)
Uterus §	salicylic acid*	7(0.8%)	8(0.2%)	6.85(2.15,21.83)	0.001	1	0.89(0.47,1.69)	2.29(1.25,4.23)
Myeloma	chlortalidone	11(2.5%)	22(1.2%)	3.06(1.32,7.12)	0.009	14	1.15(0.39,3.36)	3.68(1.46,9.31)
Liver	furosemide	89(19.8%)	143(7.4%)	2.48(1.58,3.88)	<0.001	12	1.19(0.73,1.96)	2.23(1.35,3.69)
Thyroid	progestogen (HRT) §	17(8.5%)	42(4.5%)	2.55(1.27,5.11)	0.008	3	1.19(0.67,2.10)	2.05(1.09,3.84)
Anal	bisoprolol	12(5.3%)	24(2.5%)	3.30(1.34,8.14)	0.010	14	1.69(0.62,4.64)	3.10(1.01,9.45)
Anal	nicotine	5(2.2%)	3(0.3%)	8.07(1.69,38.46)	0.009	2	0.93(0.41,2.13)	1.85(0.73,4.70)
<b>Signals associated with decreased cancer risk</b>								
Breast §	Iron	164(1.7%)	854(1.9%)	0.72(0.60,0.86)	<0.001	2	0.97(0.86,1.08)	0.80(0.70,0.92)
Breast §	trazodone	50(0.5%)	365(0.8%)	0.62(0.46,0.85)	0.003	3	0.75(0.60,0.96)	0.72(0.55,0.95)
Breast §	trimethoprim	82(0.8%)	493(1.1%)	0.71(0.55,0.90)	0.005	1	1.03(0.95,1.11)	0.93(0.84,1.02)
Colorectal	diclofenac	293(4.3%)	1,694(5.9%)	0.72(0.63,0.83)	<0.001	2	0.94(0.86,1.03)	0.84(0.75,0.93)
Colorectal	lactulose	207(3.1%)	896(3.1%)	0.77(0.65,0.91)	0.003	3	0.98(0.86,1.11)	0.80(0.68,0.93)
Colorectal	naproxen	85(1.3%)	487(1.7%)	0.71(0.56,0.91)	0.007	2	0.87(0.74,1.03)	0.77(0.63,0.94)

**Table S4 (cont)**

Cancer	Medicine	No. (%) cases	No. (%) controls	OR (95%CI)	p-value	Median ††	Low use v non-use: OR (95%CI)	High use v non-use: OR (95%CI)
Colorectal	oxybutynin	38(0.6%)	227(0.8%)	0.60(0.42,0.87)	0.006	4	1.04(0.79,1.36)	0.66(0.47,0.93)
Prostate §§	calcium	78(1.3%)	390(1.6%)	0.67(0.51,0.89)	0.006	7	0.90(0.69,1.17)	0.68(0.50,0.93)
Prostate §§	citalopram	41(0.7%)	319(1.3%)	0.53(0.37,0.75)	<0.001	5	0.98(0.76,1.27)	0.53(0.37,0.75)
Prostate §§	furosemide	362(6.1%)	1,761(7.2%)	0.74(0.64,0.85)	<0.001	12	0.98(0.85,1.13)	0.71(0.60,0.84)
Prostate §§	lactulose	138(2.3%)	631(2.6%)	0.70(0.57,0.86)	0.001	2	0.95(0.82,1.10)	0.73(0.62,0.88)
Prostate §§	senna	67(1.1%)	328(1.3%)	0.67(0.50,0.90)	0.007	2	0.91(0.75,1.10)	0.61(0.48,0.78)
Prostate §§	vitamin D	61(1.0%)	342(1.4%)	0.60(0.44,0.82)	0.001	6	0.99(0.76,1.29)	0.60(0.43,0.83)
Bladder	pantoprazole	5(0.2%)	43(0.4%)	0.27(0.10,0.71)	0.008	7	2.08(1.16,3.72)	0.22(0.08,0.66)
Bladder	sotalol	5(0.2%)	63(0.6%)	0.25(0.09,0.71)	0.010	13	0.19(0.05,0.82)	0.18(0.04,0.78)
Oesophagus	aspirin high dose	28(1.5%)	167(2.1%)	0.52(0.33,0.83)	0.006	10	0.88(0.57,1.38)	0.53(0.31,0.89)
Non-Hodgkin's lymphoma	vitamin B	26(1.6%)	143(2.0%)	0.51(0.32,0.81)	0.004	5	0.96(0.68,1.35)	0.50(0.32,0.81)
Leukaemia	calcium	42(2.9%)	205(3.3%)	0.56(0.37,0.85)	0.007	7	0.83(0.56,1.23)	0.50(0.32,0.79)
Stomach	diclofenac*	3(0.3%)	44(0.9%)	0.18(0.05,0.63)	0.007	1	0.97(0.61,1.56)	0.60(0.33,1.07)
Kidney	digoxin	15(1.3%)	83(1.8%)	0.43(0.23,0.80)	0.008	19	0.79(0.41,1.53)	0.38(0.17,0.86)

† comorbidities include diabetes, myocardial infarction, coronary heart disease, heart failure, peripheral vascular disease, dementia, cerebrovascular disease, chronic obstructive pulmonary disease, osteoporosis, rheumatological disease, renal disease, liver disease, irritable bowel disease, human immunodeficiency viruses and hemiplegia/paraplegia, plus potential site-specific confounders; OR odds ratio; CI confidence interval; medicines systemic unless otherwise indicated\* (local); HRT: hormone replacement therapy; § analyses restricted to females only; §§ analyses restricted to males only; low use: patient received more than 1 item of medicine and <=median number of items; high use: patient received > median number of items of medicine; †† among control users; - no cases with >=6 prescriptions in category

**Table S5: Sensitivity analyses for comorbidity<sup>†</sup> adjusted signals: exposure any prescription**

Cancer	Medicine	1 year lag (main analysis)		2 year lag		Exclude matched sets where cases have additional cancer diagnosis within 12 months		Adjusted for comorbidities, smoking & alcohol	
		OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value
<b>Signals associated with increased cancer risk</b>									
Breast §	estrogen-HRT	1.26(1.19,1.33)	<0.001	1.27(1.20,1.35)	<0.001	1.26(1.19,1.33)	<0.001	1.22(1.14,1.31)	<0.001
Breast §	metronidazole*	1.25(1.06,1.48)	0.007	1.27(1.06,1.52)	0.009	1.26(1.06,1.48)	0.007	1.24(1.02,1.51)	0.031
Breast §	progestogen-HRT	1.28(1.21,1.35)	<0.001	1.30(1.23,1.38)	<0.001	1.28(1.21,1.35)	<0.001	1.23(1.15,1.31)	<0.001
Lung	amoxicillin	1.40(1.33,1.48)	<0.001	1.36(1.28,1.43)	<0.001	1.40(1.32,1.48)	<0.001	1.28(1.19,1.38)	<0.001
Lung	azathioprine	1.56(1.14,2.13)	0.005	1.64(1.18,2.29)	0.003	1.56(1.14,2.14)	0.006	1.99(1.32,2.99)	0.001
Lung	cimetidine	1.39(1.27,1.51)	<0.001	1.39(1.27,1.52)	<0.001	1.39(1.27,1.52)	<0.001	1.35(1.20,1.52)	<0.001
Lung	clarithromycin	1.34(1.23,1.46)	<0.001	1.35(1.23,1.48)	<0.001	1.33(1.22,1.45)	<0.001	1.30(1.17,1.45)	<0.001
Lung	codeine	1.31(1.24,1.38)	<0.001	1.23(1.16,1.30)	<0.001	1.31(1.24,1.39)	<0.001	1.21(1.13,1.31)	<0.001
Lung	dihydrocodeine	1.29(1.21,1.38)	<0.001	1.27(1.18,1.36)	<0.001	1.29(1.21,1.38)	<0.001	1.16(1.06,1.27)	0.001
Lung	folic acid §	1.49(1.27,1.75)	<0.001	1.51(1.27,1.80)	<0.001	1.51(1.28,1.77)	<0.001	1.43(1.15,1.76)	0.001
Lung	ipratropium*	1.58(1.43,1.74)	<0.001	1.60(1.44,1.78)	<0.001	1.59(1.44,1.76)	<0.001	1.42(1.25,1.63)	<0.001
Lung	nitrazepam	1.35(1.14,1.60)	<0.001	1.37(1.15,1.63)	<0.001	1.34(1.13,1.59)	0.001	1.55(1.23,1.96)	<0.001
Lung	nystatin	1.27(1.12,1.44)	<0.001	1.29(1.12,1.49)	<0.001	1.26(1.11,1.42)	<0.001	1.21(1.03,1.42)	0.019
Lung	paracetamol	1.34(1.27,1.42)	<0.001	1.27(1.20,1.34)	<0.001	1.35(1.28,1.43)	<0.001	1.24(1.15,1.34)	<0.001
Lung	salbutamol*	1.44(1.34,1.54)	<0.001	1.36(1.27,1.46)	<0.001	1.44(1.34,1.55)	<0.001	1.39(1.27,1.53)	<0.001
Lung	salmeterol*	1.34(1.21,1.48)	<0.001	1.31(1.18,1.46)	<0.001	1.34(1.21,1.48)	<0.001	1.39(1.21,1.58)	<0.001
Lung	tiotropium*	1.75(1.52,2.02)	<0.001	1.64(1.38,1.94)	<0.001	1.77(1.53,2.04)	<0.001	1.63(1.37,1.95)	<0.001
Colorectal	allopurinol	1.27(1.11,1.46)	0.001	1.31(1.13,1.51)	<0.001	1.24(1.08,1.43)	0.002	1.26(1.06,1.50)	0.010
Colorectal	prednisolone*	1.31(1.12,1.54)	0.001	1.28(1.07,1.52)	0.007	1.32(1.12,1.54)	0.001	1.18(0.97,1.43)	0.090
Prostate §§	cerivastatin	1.43(1.10,1.87)	0.008	1.40(1.06,1.85)	0.019	1.44(1.10,1.89)	0.007	1.27(0.91,1.77)	0.168
Prostate §§	clioquinol*	1.30(1.11,1.52)	0.001	1.34(1.13,1.58)	0.001	1.32(1.13,1.54)	0.001	1.31(1.09,1.57)	0.004
Bladder	celecoxib	1.40(1.14,1.73)	0.002	1.38(1.10,1.74)	0.006	1.40(1.13,1.74)	0.002	1.29(1.01,1.66)	0.040
Bladder	dexamethasone*	1.30(1.10,1.54)	0.003	1.22(1.01,1.48)	0.041	1.29(1.08,1.53)	0.005	1.19(0.97,1.46)	0.104
Bladder	nicotine	2.04(1.65,2.51)	<0.001	1.97(1.55,2.50)	<0.001	2.03(1.64,2.51)	<0.001	1.65(1.28,2.13)	<0.001
Bladder	trimethoprim	1.96(1.73,2.21)	<0.001	1.56(1.36,1.78)	<0.001	1.95(1.72,2.20)	<0.001	1.95(1.68,2.26)	<0.001
Malignant melanoma	chloramphenicol*	1.28(1.08,1.51)	0.003	1.30(1.09,1.55)	0.004	1.28(1.09,1.51)	0.003	1.04(0.85,1.27)	0.701
Malignant melanoma	clopidogrel	1.60(1.13,2.27)	0.008	1.61(1.08,2.40)	0.019	1.56(1.09,2.22)	0.014	1.51(1.01,2.27)	0.045
Malignant melanoma	flucloxacillin	1.28(1.11,1.46)	<0.001	1.28(1.10,1.48)	0.001	1.27(1.11,1.46)	0.001	1.27(1.07,1.50)	0.006
Oesophagus	alginic acid	1.40(1.22,1.62)	<0.001	1.36(1.17,1.59)	<0.001	1.42(1.22,1.64)	<0.001	1.35(1.12,1.63)	0.002
Oesophagus	azathioprine	2.47(1.41,4.35)	0.002	2.42(1.30,4.51)	0.005	2.47(1.40,4.34)	0.002	2.46(1.17,5.20)	0.018
Oesophagus	cisapride	2.03(1.27,3.25)	0.003	1.97(1.23,3.18)	0.005	2.04(1.27,3.26)	0.003	2.17(1.13,4.18)	0.020
Oesophagus	gramacidin*	1.52(1.11,2.09)	0.008	1.55(1.10,2.17)	0.012	1.52(1.11,2.09)	0.009	1.42(0.96,2.11)	0.080
Oesophagus	lansoprazole	1.35(1.17,1.55)	<0.001	1.28(1.10,1.49)	0.001	1.33(1.15,1.53)	<0.001	1.26(1.06,1.50)	0.009
Oesophagus	nicotine	1.50(1.16,1.94)	0.002	1.35(1.01,1.80)	0.043	1.51(1.17,1.96)	0.002	1.18(0.87,1.60)	0.277
Oesophagus	nystatin	1.58(1.21,2.06)	0.001	1.68(1.25,2.25)	0.001	1.56(1.19,2.04)	0.001	1.76(1.27,2.43)	0.001
Oesophagus	nystatin*	1.29(1.08,1.55)	0.005	1.34(1.11,1.63)	0.003	1.27(1.06,1.53)	0.010	1.44(1.16,1.79)	0.001



Table S5 (cont)

Cancer	Medicine	1 year lag (main analysis)		2 year lag		Exclude matched sets where cases have additional cancer diagnosis within 12 months		Adjusted for comorbidities, smoking & alcohol	
		OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value
Oesophagus	omeprazole	1.39(1.23,1.57)	<0.001	1.31(1.15,1.50)	<0.001	1.39(1.22,1.57)	<0.001	1.25(1.07,1.46)	0.006
Oesophagus	triamcinolone*	1.47(1.13,1.91)	0.004	1.42(1.07,1.88)	0.016	1.48(1.14,1.93)	0.003	1.44(1.03,2.00)	0.033
Oesophagus	vitamin B	1.36(1.12,1.65)	0.002	1.32(1.07,1.62)	0.010	1.37(1.12,1.66)	0.002	1.13(0.87,1.46)	0.352
Non-Hodgkin's lymphoma	amoxicillin	1.34(1.19,1.50)	<0.001	1.29(1.14,1.46)	<0.001	1.36(1.21,1.52)	<0.001	1.22(1.05,1.42)	0.008
Non-Hodgkin's lymphoma	betamethasone*	1.37(1.19,1.57)	<0.001	1.40(1.21,1.63)	<0.001	1.37(1.19,1.57)	<0.001	1.23(1.03,1.47)	0.021
Non-Hodgkin's lymphoma	chlorhexidine*	1.67(1.20,2.31)	0.002	1.66(1.15,2.39)	0.007	1.69(1.22,2.35)	0.002	1.27(0.81,1.98)	0.298
Non-Hodgkin's lymphoma	clarithromycin	1.33(1.09,1.63)	0.005	1.21(0.97,1.52)	0.093	1.32(1.08,1.62)	0.007	1.30(1.02,1.66)	0.033
Non-Hodgkin's lymphoma	clobetasol*	1.73(1.25,2.38)	0.001	1.78(1.26,2.52)	0.001	1.71(1.23,2.36)	0.001	1.50(1.00,2.25)	0.048
Non-Hodgkin's lymphoma	erythromycin	1.26(1.07,1.49)	0.006	1.21(1.01,1.44)	0.035	1.29(1.09,1.52)	0.003	1.25(1.02,1.53)	0.032
Non-Hodgkin's lymphoma	hydroxyzine	1.75(1.16,2.66)	0.008	1.74(1.07,2.81)	0.024	1.67(1.09,2.56)	0.018	1.75(1.07,2.87)	0.027
Non-Hodgkin's lymphoma	methotrexate	2.93(1.50,5.69)	0.002	3.22(1.61,6.44)	0.001	3.01(1.54,5.89)	0.001	3.66(1.58,8.45)	0.002
Non-Hodgkin's lymphoma	prednisolone	1.37(1.13,1.66)	0.001	1.33(1.08,1.64)	0.007	1.36(1.12,1.65)	0.002	1.45(1.14,1.83)	0.002
Non-Hodgkin's lymphoma	prochlorperazine	1.30(1.08,1.58)	0.007	1.32(1.07,1.63)	0.009	1.31(1.08,1.59)	0.007	1.39(1.10,1.75)	0.006
Leukaemia	allopurinol	1.57(1.20,2.06)	0.001	1.44(1.07,1.93)	0.015	1.56(1.18,2.05)	0.002	1.88(1.32,2.68)	0.001
Leukaemia	amoxicillin	1.29(1.14,1.45)	<0.001	1.22(1.07,1.38)	0.002	1.28(1.13,1.44)	<0.001	1.15(0.98,1.35)	0.088
Leukaemia	trimethoprim	1.26(1.06,1.49)	0.010	1.20(0.99,1.45)	0.064	1.25(1.05,1.49)	0.013	1.35(1.08,1.68)	0.009
Oral (inc. Head,neck & nasal)	codeine	1.29(1.12,1.49)	<0.001	1.28(1.11,1.49)	0.001	1.27(1.10,1.47)	0.001	1.10(0.91,1.32)	0.336
Oral (inc. Head,neck & nasal)	flucloxacillin	1.36(1.13,1.62)	0.001	1.31(1.08,1.60)	0.007	1.39(1.16,1.67)	<0.001	1.30(1.04,1.64)	0.024
Oral (inc. Head,neck & nasal)	folic acid §	2.52(1.64,3.89)	<0.001	2.42(1.52,3.85)	<0.001	2.51(1.62,3.88)	<0.001	2.38(1.29,4.39)	0.006
Oral (inc. Head,neck & nasal)	nystatin	2.06(1.49,2.85)	<0.001	1.94(1.35,2.79)	<0.001	2.06(1.48,2.85)	<0.001	1.73(1.15,2.61)	0.009
Oral (inc. Head,neck & nasal)	vitamin B	2.75(2.22,3.41)	<0.001	2.73(2.17,3.43)	<0.001	2.79(2.24,3.47)	<0.001	2.10(1.57,2.79)	<0.001
Oral (inc. Head,neck & nasal)	vitamin D	1.69(1.24,2.30)	0.001	1.78(1.26,2.51)	0.001	1.69(1.24,2.31)	0.001	1.65(1.10,2.49)	0.015
Stomach	cimetidine	1.44(1.15,1.79)	0.001	1.40(1.12,1.76)	0.003	1.42(1.13,1.78)	0.002	4.08(1.54,10.81)	0.005
Stomach	clarithromycin	1.35(1.08,1.69)	0.009	1.22(0.95,1.56)	0.114	1.35(1.07,1.70)	0.011	1.91(0.94,3.89)	0.075
Stomach	digoxin	1.49(1.10,2.01)	0.010	1.43(1.03,1.97)	0.031	1.52(1.12,2.07)	0.007	1.19(0.90,1.59)	0.220
Stomach	vitamin B	1.54(1.21,1.95)	<0.001	1.56(1.21,2.00)	0.001	1.56(1.22,1.98)	<0.001	1.11(0.85,1.46)	0.436
Ovary §	phenytoin	3.24(1.62,6.50)	0.001	3.52(1.74,7.12)	<0.001	3.27(1.63,6.55)	0.001	1.57(1.08,2.29)	0.019
Ovary §	rabeprazole	2.18(1.22,3.89)	0.009	2.68(1.46,4.93)	0.002	2.20(1.23,3.94)	0.008	1.98(1.45,2.70)	<0.001
Kidney	amoxicillin	1.28(1.11,1.48)	0.001	1.19(1.03,1.39)	0.020	1.29(1.11,1.49)	0.001	1.28(1.07,1.53)	0.007
Kidney	hydrochlorothiazide	1.93(1.30,2.86)	0.001	2.01(1.35,3.00)	0.001	2.02(1.36,3.01)	0.001	2.29(1.41,3.71)	0.001
Kidney	perindopril	1.63(1.16,2.30)	0.005	1.52(1.03,2.23)	0.035	1.73(1.22,2.44)	0.002	1.78(1.19,2.67)	0.005
Pancreas	betamethasone*	1.34(1.11,1.62)	0.003	1.31(1.07,1.61)	0.008	1.34(1.11,1.62)	0.003	1.27(0.96,1.67)	0.093
Pancreas	nicotine	1.94(1.38,2.73)	<0.001	1.44(0.98,2.12)	0.064	1.99(1.41,2.80)	<0.001	1.13(0.83,1.52)	0.440
Cervix & other gynae §	dihydrocodeine	1.39(1.11,1.73)	0.004	1.33(1.05,1.69)	0.019	1.38(1.10,1.72)	0.006	1.35(1.07,1.70)	0.012
Cervix & other gynae §	ranitidine	1.37(1.08,1.73)	0.010	1.31(1.02,1.69)	0.035	1.38(1.08,1.75)	0.009	1.18(0.78,1.78)	0.435
Uterus §	atenolol	1.39(1.15,1.67)	0.001	1.34(1.11,1.62)	0.003	1.41(1.17,1.70)	<0.001	1.31(1.05,1.65)	0.019

Table S5 (cont)

Cancer	Medicine	1 year lag (main analysis)		2 year lag		Exclude matched sets where cases have additional cancer diagnosis within 12 months		Adjusted for comorbidities, smoking & alcohol	
		OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value
Uterus §	bendroflumethiazide	1.27(1.07,1.51)	0.005	1.32(1.10,1.57)	0.002	1.27(1.07,1.51)	0.006	1.24(1.01,1.53)	0.041
Uterus §	bisoprolol	1.82(1.21,2.74)	0.004	1.94(1.24,3.02)	0.004	1.79(1.18,2.74)	0.007	1.64(1.03,2.61)	0.037
Uterus §	doxazosin	1.68(1.17,2.43)	0.005	1.78(1.21,2.63)	0.003	1.67(1.15,2.43)	0.007	1.46(0.94,2.26)	0.088
Uterus §	enalapril	1.66(1.18,2.33)	0.003	1.78(1.26,2.52)	0.001	1.77(1.26,2.50)	0.001	2.31(1.52,3.52)	<0.001
Uterus §	ibuprofen*	1.53(1.14,2.06)	0.005	1.73(1.26,2.38)	0.001	1.54(1.15,2.08)	0.004	1.24(0.86,1.79)	0.241
Uterus §	mefenamic acid	1.72(1.22,2.42)	0.002	1.48(1.03,2.13)	0.032	1.78(1.27,2.51)	0.001	1.54(1.01,2.35)	0.046
Uterus §	tranexamic acid	1.87(1.25,2.79)	0.002	1.34(0.85,2.12)	0.212	1.96(1.31,2.93)	0.001	1.27(0.79,2.02)	0.325
Larynx	benzylamine*	2.33(1.34,4.04)	0.003	1.71(0.90,3.23)	0.101	2.11(1.18,3.79)	0.012	1.49(0.78,2.86)	0.228
Larynx	dextropropoxyphene	1.51(1.19,1.92)	0.001	1.52(1.19,1.95)	0.001	1.53(1.20,1.96)	0.001	2.35(1.07,5.14)	0.033
Larynx	paracetamol	1.45(1.20,1.76)	<0.001	1.36(1.12,1.65)	0.002	1.48(1.22,1.81)	<0.001	1.60(1.15,2.24)	0.006
Larynx	vitamin B	2.40(1.72,3.36)	<0.001	2.24(1.54,3.25)	<0.001	2.54(1.80,3.58)	<0.001	1.30(0.98,1.72)	0.067
Brain and CNS	carbamazepine	2.20(1.34,3.62)	0.002	1.76(1.01,3.06)	0.047	2.27(1.37,3.73)	0.001	1.49(0.95,2.33)	0.083
Myeloma	amoxicillin	1.53(1.21,1.92)	<0.001	1.56(1.23,1.98)	<0.001	1.56(1.24,1.97)	<0.001	1.33(0.99,1.79)	0.060
Myeloma	ciprofloxacin	1.73(1.17,2.55)	0.006	1.68(1.09,2.58)	0.019	1.84(1.24,2.72)	0.002	1.58(0.99,2.54)	0.056
Thyroid	gabapentin	5.13(1.71,15.37)	0.003	4.05(1.17,14.09)	0.028	5.00(1.67,15.01)	0.004	3.99(1.01,15.82)	0.049
Thyroid	levothyroxine	2.18(1.37,3.48)	0.001	2.45(1.50,4.01)	<0.001	2.27(1.42,3.64)	0.001	2.72(1.43,5.17)	0.002
Anal	clonidine	3.87(1.52,9.85)	0.005	5.16(1.87,14.27)	0.002	5.08(1.89,13.67)	0.001	7.31(2.16,24.74)	0.001
Anal	doxazosin	2.48(1.27,4.86)	0.008	3.83(1.83,8.04)	<0.001	2.40(1.17,4.96)	0.018	2.99(1.25,7.14)	0.014
<b>Signals associated with decreased cancer risk</b>									
Breast §	trazodone	0.79(0.67,0.93)	0.005	0.80(0.67,0.96)	0.015	0.80(0.68,0.94)	0.007	0.75(0.62,0.92)	0.005
Lung	fluocinolone*	0.67(0.52,0.88)	0.003	0.68(0.52,0.90)	0.008	0.68(0.52,0.88)	0.004	0.66(0.47,0.92)	0.014
Lung	levodopa	0.50(0.35,0.73)	<0.001	0.40(0.26,0.61)	<0.001	0.49(0.33,0.71)	<0.001	0.66(0.41,1.06)	0.087
Lung	nitrofurantoin	0.74(0.60,0.93)	0.008	0.74(0.58,0.95)	0.018	0.72(0.58,0.91)	0.005	0.73(0.56,0.96)	0.024
Lung	progestogen-contraceptive §	0.62(0.45,0.86)	0.004	0.57(0.41,0.80)	0.001	0.64(0.46,0.88)	0.007	0.55(0.36,0.86)	0.008
Lung	risperidone	0.55(0.36,0.84)	0.005	0.57(0.36,0.90)	0.017	0.56(0.37,0.85)	0.006	0.57(0.33,1.01)	0.054
Colorectal	levodopa	0.60(0.43,0.85)	0.004	0.61(0.42,0.88)	0.009	0.62(0.44,0.87)	0.007	0.74(0.48,1.14)	0.170
Colorectal	lofepramine	0.71(0.55,0.92)	0.009	0.74(0.56,0.97)	0.028	0.73(0.56,0.94)	0.016	0.68(0.49,0.94)	0.021
Colorectal	meloxicam	0.76(0.63,0.92)	0.005	0.77(0.62,0.95)	0.014	0.78(0.64,0.94)	0.010	0.74(0.59,0.93)	0.008
Colorectal	metoclopramide	0.78(0.68,0.91)	0.001	0.77(0.65,0.91)	0.002	0.80(0.69,0.93)	0.003	0.78(0.65,0.93)	0.005
Colorectal	nitrofurantoin	0.71(0.56,0.91)	0.006	0.55(0.41,0.73)	<0.001	0.71(0.56,0.91)	0.006	0.65(0.48,0.87)	0.003
Prostate §§	levodopa	0.47(0.30,0.72)	0.001	0.48(0.30,0.78)	0.003	0.47(0.30,0.72)	0.001	0.44(0.25,0.80)	0.007
Prostate §§	risperidone	0.37(0.20,0.70)	0.002	0.42(0.21,0.84)	0.013	0.40(0.22,0.75)	0.004	0.44(0.20,0.96)	0.038
Prostate §§	senna	0.76(0.66,0.87)	<0.001	0.73(0.62,0.85)	<0.001	0.75(0.65,0.87)	<0.001	0.78(0.65,0.92)	0.004
Bladder	iron	0.77(0.64,0.91)	0.003	0.72(0.59,0.88)	0.001	0.77(0.65,0.92)	0.005	0.81(0.65,1.01)	0.056
Malignant melanoma	dipyridamole	0.42(0.22,0.80)	0.008	0.35(0.17,0.72)	0.005	0.43(0.22,0.81)	0.009	0.61(0.29,1.27)	0.187
Malignant melanoma	gliclazide	0.51(0.32,0.80)	0.004	0.49(0.30,0.79)	0.004	0.53(0.34,0.83)	0.006	0.41(0.24,0.69)	0.001
Oesophagus	estrogen-HRT §	0.59(0.43,0.79)	<0.001	0.61(0.46,0.83)	0.001	0.60(0.45,0.82)	0.001	0.56(0.39,0.81)	0.002

Table S5 (cont)

Cancer	Medicine	1 year lag (main analysis)		2 year lag		Exclude matched sets where cases have additional cancer diagnosis within 12 months		Adjusted for comorbidities, smoking & alcohol	
		OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value
Non-Hodgkin's lymphoma	progestogen-contraceptive §	0.56(0.36,0.86)	0.008	0.51(0.32,0.80)	0.004	0.54(0.35,0.85)	0.007	0.54(0.32,0.93)	0.027
Oral (inc. Head,neck & nasal)	doxycycline	0.45(0.30,0.66)	<0.001	0.45(0.29,0.69)	<0.001	0.43(0.28,0.64)	<0.001	0.41(0.25,0.67)	<0.001
Oral (inc. Head,neck & nasal)	ispaghula	0.63(0.47,0.85)	0.002	0.62(0.45,0.85)	0.003	0.65(0.48,0.87)	0.005	0.72(0.49,1.04)	0.083
Ovary §	loratadine	0.64(0.46,0.89)	0.008	0.71(0.51,1.00)	0.050	0.63(0.45,0.88)	0.007	0.70(0.47,1.04)	0.076
Ovary §	progestogen-contraceptive	0.55(0.39,0.78)	0.001	0.52(0.37,0.75)	<0.001	0.56(0.39,0.79)	0.001	0.47(0.30,0.72)	0.001
Cervix & other gynae §	terbinafine	0.18(0.07,0.49)	0.001	0.16(0.05,0.51)	0.002	0.19(0.07,0.52)	0.001	0.19(0.07,0.53)	0.002
Uterus §	estrogen-HRT	0.73(0.60,0.89)	0.002	0.71(0.58,0.87)	0.001	0.71(0.58,0.87)	0.001	0.81(0.64,1.03)	0.081
Uterus §	progestogen-contraceptive	0.37(0.19,0.69)	0.002	0.38(0.20,0.72)	0.003	0.37(0.20,0.70)	0.002	0.40(0.20,0.80)	0.010
Larynx	doxazosin	0.36(0.19,0.70)	0.002	0.43(0.22,0.84)	0.014	0.37(0.19,0.71)	0.003	0.43(0.19,0.98)	0.044
Larynx	terbinafine	0.32(0.14,0.75)	0.009	0.33(0.13,0.84)	0.020	0.33(0.14,0.77)	0.010	0.31(0.10,0.99)	0.048

† comorbidities include diabetes, myocardial infarction, coronary heart disease, heart failure, peripheral vascular disease, dementia, cerebrovascular disease, chronic obstructive pulmonary disease, osteoporosis, rheumatological disease, renal disease, liver disease, irritable bowel disease, human immunodeficiency viruses and hemiplegia/paraplegia, plus potential site-specific confounders; OR odds ratio; CI confidence interval; CNS: central nervous system; medicines systemic unless otherwise indicated\* (local); HRT: hormone replacement therapy; § females only; §§ males only

**Table S6: Sensitivity analyses for comorbidity<sup>†</sup> & smoking adjusted signals: exposure any prescription**

		1 year lag (main analysis)		2 year lag		Exclude matched sets where cases have additional cancer diagnosis within 12 months		1 year lag with multiple imputation		Adjusted for comorbidities smoking & alcohol	
Cancer	Medicine	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value
<b>Signals associated with increased cancer risk</b>											
Breast §	bisoprolol	1.30(1.11,1.51)	0.001	1.27(1.07,1.51)	0.007	1.32(1.13,1.54)	<0.001	1.34(1.16,1.54)	<0.001	1.30(1.10,1.54)	0.002
Breast §	metronidazole*	1.26(1.06,1.51)	0.010	1.32(1.09,1.60)	0.005	1.26(1.05,1.50)	0.012	1.25(1.06,1.47)	0.009	1.24(1.02,1.51)	0.030
Breast §	progestogen (HRT)	1.25(1.17,1.33)	<0.001	1.28(1.20,1.37)	<0.001	1.25(1.18,1.33)	<0.001	1.28(1.21,1.35)	<0.001	1.23(1.15,1.31)	<0.001
Lung	amoxicillin	1.29(1.21,1.37)	<0.001	1.26(1.18,1.35)	<0.001	1.29(1.20,1.37)	<0.001	1.37(1.29,1.45)	<0.001	1.28(1.19,1.37)	<0.001
Lung	azathioprine	1.76(1.21,2.57)	0.003	1.96(1.30,2.95)	0.001	1.81(1.24,2.65)	0.002	1.71(1.22,2.39)	0.002	2.02(1.34,3.06)	0.001
Lung	cimetidine	1.35(1.22,1.50)	<0.001	1.29(1.16,1.44)	<0.001	1.37(1.23,1.52)	<0.001	1.30(1.19,1.43)	<0.001	1.35(1.20,1.52)	<0.001
Lung	ipratropium*	1.43(1.27,1.61)	<0.001	1.49(1.31,1.69)	<0.001	1.45(1.29,1.63)	<0.001	1.46(1.31,1.62)	<0.001	1.42(1.24,1.62)	<0.001
Lung	nitrazepam	1.34(1.09,1.65)	0.005	1.44(1.15,1.79)	0.001	1.32(1.07,1.62)	0.009	1.30(1.09,1.57)	0.005	1.52(1.21,1.93)	<0.001
Lung	salbutamol*	1.35(1.24,1.47)	<0.001	1.28(1.18,1.40)	<0.001	1.35(1.24,1.47)	<0.001	1.41(1.30,1.52)	<0.001	1.38(1.26,1.52)	<0.001
Lung	salmeterol*	1.44(1.28,1.62)	<0.001	1.47(1.29,1.67)	<0.001	1.45(1.28,1.63)	<0.001	1.42(1.27,1.58)	<0.001	1.38(1.21,1.58)	<0.001
Lung	tiotropium*	1.63(1.39,1.91)	<0.001	1.49(1.23,1.80)	<0.001	1.63(1.39,1.91)	<0.001	1.66(1.43,1.94)	<0.001	1.61(1.35,1.92)	<0.001
Colorectal	allopurinol	1.26(1.08,1.48)	0.004	1.31(1.10,1.56)	0.002	1.22(1.04,1.44)	0.015	1.26(1.10,1.45)	0.001	1.26(1.06,1.50)	0.010
Prostate §§	alfuzosin	1.66(1.37,2.01)	<0.001	1.58(1.26,1.98)	<0.001	1.62(1.33,1.97)	<0.001	1.69(1.43,2.01)	<0.001	1.63(1.32,2.02)	<0.001
Prostate §§	clioquinol*	1.34(1.13,1.58)	0.001	1.36(1.13,1.64)	0.001	1.36(1.15,1.61)	<0.001	1.30(1.11,1.52)	0.001	1.31(1.09,1.57)	0.004
Bladder	cefalexin	1.37(1.17,1.60)	<0.001	1.30(1.09,1.55)	0.003	1.35(1.15,1.58)	<0.001	1.43(1.24,1.65)	<0.001	1.42(1.19,1.69)	<0.001
Bladder	ciprofloxacin	1.40(1.18,1.65)	<0.001	1.28(1.06,1.55)	0.012	1.38(1.16,1.63)	<0.001	1.47(1.26,1.72)	<0.001	1.30(1.08,1.56)	0.005
Bladder	nicotine	1.54(1.23,1.94)	<0.001	1.48(1.15,1.92)	0.003	1.56(1.24,1.97)	<0.001	1.67(1.34,2.07)	<0.001	1.65(1.28,2.13)	<0.001
Bladder	phenoxymethylpenicillin	1.30(1.08,1.56)	0.006	1.22(0.99,1.50)	0.064	1.31(1.08,1.58)	0.005	1.23(1.04,1.46)	0.017	1.34(1.10,1.65)	0.005
Bladder	quinine	1.28(1.06,1.54)	0.009	1.30(1.06,1.60)	0.011	1.28(1.06,1.55)	0.009	1.19(1.01,1.41)	0.043	1.37(1.11,1.68)	0.003
Bladder	ranitidine	1.26(1.10,1.44)	0.001	1.31(1.13,1.51)	<0.001	1.25(1.09,1.44)	0.002	1.24(1.10,1.40)	<0.001	1.29(1.11,1.49)	0.001
Bladder	trimethoprim	1.92(1.68,2.20)	<0.001	1.57(1.35,1.83)	<0.001	1.91(1.67,2.19)	<0.001	1.99(1.76,2.25)	<0.001	1.94(1.67,2.25)	<0.001
Malignant melanoma	clopidogrel	1.63(1.13,2.36)	0.009	1.55(1.01,2.39)	0.045	1.60(1.10,2.33)	0.014	1.61(1.14,2.28)	0.007	1.51(1.01,2.26)	0.047
Oesophagus	alginic acid	1.38(1.17,1.63)	<0.001	1.34(1.12,1.61)	0.002	1.39(1.17,1.65)	<0.001	1.41(1.21,1.63)	<0.001	1.36(1.13,1.64)	0.001
Oesophagus	azathioprine	3.39(1.79,6.42)	<0.001	3.70(1.77,7.72)	<0.001	3.29(1.73,6.25)	<0.001	2.71(1.53,4.79)	0.001	2.38(1.12,5.04)	0.024
Oesophagus	ipratropium*	1.45(1.11,1.89)	0.006	1.59(1.19,2.14)	0.002	1.44(1.10,1.88)	0.009	1.40(1.10,1.76)	0.005	1.66(1.23,2.26)	0.001
Oesophagus	lansoprazole	1.33(1.14,1.55)	<0.001	1.23(1.03,1.46)	0.019	1.31(1.12,1.53)	0.001	1.34(1.16,1.54)	<0.001	1.27(1.07,1.51)	0.008
Oesophagus	nystatin	1.65(1.23,2.20)	0.001	1.86(1.34,2.58)	<0.001	1.61(1.20,2.15)	0.001	1.60(1.22,2.10)	0.001	1.76(1.27,2.44)	0.001
Oesophagus	nystatin*	1.36(1.12,1.67)	0.002	1.46(1.17,1.82)	0.001	1.32(1.08,1.62)	0.007	1.34(1.11,1.60)	0.002	1.44(1.16,1.80)	0.001
Oesophagus	omeprazole	1.29(1.12,1.48)	<0.001	1.27(1.09,1.48)	0.003	1.29(1.12,1.49)	<0.001	1.39(1.23,1.58)	<0.001	1.26(1.07,1.47)	0.004
Non-Hodgkin's lymphoma	betamethasone*	1.26(1.08,1.48)	0.004	1.24(1.04,1.47)	0.014	1.26(1.07,1.47)	0.004	1.37(1.19,1.57)	<0.001	1.23(1.03,1.47)	0.020
Non-Hodgkin's lymphoma	clobetasol*	1.72(1.20,2.46)	0.003	1.77(1.19,2.62)	0.004	1.70(1.18,2.44)	0.004	1.73(1.25,2.39)	0.001	1.50(1.00,2.25)	0.048
Non-Hodgkin's lymphoma	erythromycin	1.28(1.07,1.54)	0.008	1.29(1.06,1.58)	0.012	1.30(1.08,1.57)	0.005	1.26(1.07,1.48)	0.006	1.25(1.02,1.53)	0.032
Leukaemia	oxybutynin	1.93(1.21,3.09)	0.006	1.77(1.06,2.95)	0.030	1.99(1.24,3.18)	0.004	1.62(1.12,2.35)	0.011	1.83(1.08,3.09)	0.024
Oral (inc. Head,neck & nasal)	clobetasone*	1.41(1.10,1.81)	0.007	1.26(0.95,1.66)	0.105	1.39(1.08,1.79)	0.010	1.30(1.03,1.63)	0.027	1.38(1.04,1.83)	0.026
Oral (inc. Head,neck & nasal)	nystatin	1.92(1.33,2.77)	0.001	1.89(1.26,2.86)	0.002	1.91(1.32,2.77)	0.001	2.17(1.55,3.03)	<0.001	1.73(1.15,2.61)	0.009

Table S6 (cont)

Cancer	Medicine	1 year lag (main analysis)		2 year lag		Exclude matched sets where cases have additional cancer diagnosis within 12 months		1 year lag with multiple imputation		Adjusted for comorbidities smoking & alcohol	
		OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value
Oral (inc. Head,neck & nasal)	vitamin B	2.33(1.82,3.00)	<0.001	2.55(1.94,3.36)	<0.001	2.39(1.85,3.08)	<0.001	2.40(1.92,3.00)	<0.001	2.09(1.57,2.79)	<0.001
Ovary §	phenytoin	3.86(1.68,8.89)	0.002	3.66(1.54,8.71)	0.003	3.84(1.67,8.87)	0.002	3.20(1.60,6.42)	0.001	4.06(1.53,10.77)	0.005
Stomach	codeine	1.35(1.15,1.59)	<0.001	1.32(1.11,1.57)	0.002	1.36(1.15,1.61)	<0.001	1.32(1.15,1.53)	<0.001	1.31(1.09,1.57)	0.004
Stomach	nicotines*	2.09(1.29,3.39)	0.003	2.38(1.40,4.05)	0.001	2.10(1.29,3.44)	0.003	1.63(1.03,2.57)	0.036	1.95(1.12,3.40)	0.018
Stomach	vitamin B	1.55(1.18,2.03)	0.002	1.66(1.23,2.23)	0.001	1.61(1.22,2.12)	0.001	1.51(1.19,1.92)	0.001	1.99(1.46,2.71)	<0.001
Kidney	hydrochlorothiazide	2.21(1.45,3.37)	<0.001	2.71(1.73,4.24)	<0.001	2.39(1.55,3.67)	<0.001	1.97(1.33,2.92)	0.001	2.30(1.42,3.72)	0.001
Kidney	perindopril	1.76(1.21,2.54)	0.003	1.62(1.05,2.48)	0.028	1.87(1.28,2.72)	0.001	1.65(1.17,2.33)	0.004	1.78(1.19,2.67)	0.005
Pancreas	amoxicillin	1.31(1.09,1.56)	0.003	1.34(1.11,1.62)	0.003	1.30(1.09,1.56)	0.004	1.44(1.23,1.69)	<0.001	1.30(1.07,1.59)	0.010
Uterus §	chlortalidone	2.14(1.32,3.49)	0.002	1.82(1.09,3.05)	0.022	2.26(1.38,3.68)	0.001	2.52(1.67,3.80)	<0.001	2.35(1.36,4.04)	0.002
Uterus §	enalapril	2.00(1.38,2.92)	<0.001	2.17(1.47,3.20)	<0.001	2.14(1.46,3.12)	<0.001	1.63(1.16,2.29)	0.005	2.30(1.51,3.51)	<0.001
Brain and CNS	zinc oxide*	1.97(1.19,3.27)	0.008	2.24(1.29,3.91)	0.004	1.92(1.14,3.22)	0.014	1.71(1.08,2.71)	0.023	2.08(1.19,3.63)	0.010
Larynx	dextropropoxyphene	1.54(1.14,2.08)	0.004	1.67(1.22,2.28)	0.001	1.54(1.13,2.09)	0.006	1.50(1.16,1.95)	0.002	1.59(1.14,2.23)	0.007
Larynx	paracetamol	1.40(1.10,1.79)	0.007	1.28(0.99,1.65)	0.057	1.44(1.12,1.86)	0.004	1.35(1.09,1.66)	0.005	1.29(0.98,1.71)	0.073
Larynx	vitamin B	1.80(1.21,2.68)	0.004	1.84(1.17,2.90)	0.009	1.82(1.21,2.74)	0.004	2.00(1.39,2.88)	<0.001	1.47(0.94,2.31)	0.093
Myeloma	amoxicillin	1.44(1.11,1.86)	0.006	1.46(1.11,1.93)	0.007	1.47(1.13,1.91)	0.004	1.54(1.23,1.94)	<0.001	1.34(0.99,1.81)	0.054
Myeloma	clioquinol*	2.49(1.30,4.75)	0.006	2.38(1.21,4.69)	0.012	2.52(1.32,4.80)	0.005	2.17(1.22,3.89)	0.009	2.32(1.12,4.81)	0.024
Myeloma	paracetamol	1.51(1.16,1.96)	0.002	1.38(1.05,1.81)	0.022	1.55(1.19,2.02)	0.001	1.76(1.40,2.20)	<0.001	1.70(1.25,2.31)	0.001
Thyroid	clarithromycin	2.10(1.28,3.46)	0.003	1.82(1.06,3.10)	0.029	2.14(1.30,3.52)	0.003	1.80(1.13,2.88)	0.014	1.70(0.95,3.05)	0.074
Thyroid	flucloxacillin	1.70(1.16,2.49)	0.006	1.84(1.22,2.77)	0.004	1.64(1.12,2.41)	0.012	1.63(1.14,2.32)	0.007	1.66(1.06,2.60)	0.027
Thyroid	folic acid §	2.77(1.32,5.82)	0.007	0.66(0.19,2.26)	0.506	3.02(1.42,6.41)	0.004	1.94(1.00,3.78)	0.052	2.17(0.91,5.17)	0.080
Thyroid	gabapentin	5.84(1.82,18.79)	0.003	5.17(1.36,19.66)	0.016	5.48(1.71,17.59)	0.004	5.03(1.65,15.31)	0.004	3.91(0.99,15.44)	0.052
Thyroid	levothyroxine	2.21(1.27,3.83)	0.005	2.57(1.43,4.61)	0.002	2.27(1.30,3.97)	0.004	2.07(1.29,3.32)	0.002	2.68(1.41,5.08)	0.003
Thyroid	mefenamic acid	2.30(1.25,4.25)	0.008	2.22(1.19,4.14)	0.012	2.24(1.21,4.15)	0.010	1.69(0.96,2.99)	0.068	1.98(0.98,4.01)	0.059
Anal	clonidine	4.49(1.61,12.50)	0.004	5.39(1.82,16.02)	0.002	6.44(2.12,19.56)	0.001	4.44(1.73,11.42)	0.002	7.33(2.17,24.82)	0.001
Anal	doxazosin	2.76(1.34,5.71)	0.006	3.01(1.37,6.59)	0.006	2.56(1.18,5.53)	0.017	2.56(1.30,5.03)	0.006	3.03(1.27,7.24)	0.013
Anal	theophylline	9.08(1.78,46.43)	0.008	5.65(1.04,30.59)	0.044	2.19(0.36,13.30)	0.394	4.36(1.19,15.89)	0.026	8.67(1.24,60.81)	0.030
<b>Signals associated with decreased cancer risk</b>											
Breast §	trazodone	0.74(0.62,0.89)	0.001	0.76(0.62,0.93)	0.009	0.75(0.62,0.89)	0.002	0.79(0.67,0.93)	0.005	0.75(0.62,0.92)	0.005
Lung	fluocinolone*	0.65(0.48,0.89)	0.007	0.65(0.47,0.91)	0.013	0.66(0.49,0.90)	0.009	0.68(0.51,0.91)	0.009	0.66(0.47,0.92)	0.015
Colorectal	metoclopramide	0.77(0.65,0.91)	0.002	0.75(0.63,0.90)	0.002	0.79(0.67,0.92)	0.004	0.78(0.67,0.91)	0.001	0.78(0.65,0.93)	0.005

**Table S6 (cont)**

Cancer	Medicine	1 year lag (main analysis)		2 year lag		Exclude matched sets where cases have additional cancer diagnosis within 12 months		1 year lag with multiple imputation		Adjusted for comorbidities smoking & alcohol	
		OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value
Colorectal	nitrofurantoin	0.66(0.51,0.87)	0.003	0.50(0.36,0.69)	<0.001	0.66(0.50,0.86)	0.002	0.71(0.56,0.90)	0.005	0.65(0.48,0.86)	0.003
Prostate §§	levodopa	0.44(0.26,0.75)	0.003	0.55(0.30,1.00)	0.048	0.44(0.26,0.75)	0.003	0.47(0.30,0.73)	0.001	0.44(0.25,0.80)	0.007
Prostate §§	risperidone	0.38(0.18,0.78)	0.009	0.61(0.29,1.29)	0.195	0.38(0.18,0.78)	0.009	0.37(0.20,0.70)	0.002	0.44(0.20,0.96)	0.039
Prostate §§	senna	0.77(0.66,0.90)	0.001	0.77(0.64,0.92)	0.004	0.77(0.66,0.90)	0.001	0.76(0.66,0.87)	<0.001	0.78(0.65,0.92)	0.004
Bladder	sotalol	0.19(0.07,0.52)	0.001	0.20(0.07,0.55)	0.002	0.16(0.05,0.51)	0.002	0.25(0.11,0.55)	0.001	0.13(0.04,0.44)	0.001
Malignant melanoma	gliclazide	0.49(0.30,0.80)	0.005	0.39(0.22,0.69)	0.001	0.50(0.30,0.82)	0.007	0.50(0.32,0.79)	0.003	0.41(0.24,0.69)	0.001
Oesophagus	diazepam	0.73(0.58,0.91)	0.005	0.73(0.57,0.93)	0.012	0.73(0.58,0.91)	0.005	0.77(0.63,0.95)	0.013	0.77(0.60,0.97)	0.030
Oesophagus	estrogen (HRT) §	0.61(0.44,0.84)	0.003	0.59(0.42,0.83)	0.003	0.62(0.44,0.86)	0.004	0.61(0.45,0.82)	0.001	0.56(0.39,0.81)	0.002
Non-Hodgkin's lymphoma	progestogen (cont) §	0.49(0.30,0.81)	0.005	0.41(0.24,0.71)	0.001	0.47(0.28,0.78)	0.003	0.56(0.36,0.86)	0.008	0.54(0.32,0.93)	0.027
Oral (inc. Head,neck & nasal)	doxycycline	0.43(0.28,0.67)	<0.001	0.43(0.27,0.69)	0.001	0.41(0.26,0.64)	<0.001	0.46(0.31,0.68)	<0.001	0.40(0.24,0.66)	<0.001
Ovary §	progestogen (cont)	0.56(0.38,0.81)	0.003	0.51(0.34,0.76)	0.001	0.56(0.38,0.82)	0.003	0.55(0.39,0.78)	0.001	0.47(0.30,0.72)	0.001
Cervix & other gynae §	terbinafine	0.20(0.07,0.54)	0.002	0.18(0.05,0.58)	0.004	0.21(0.07,0.58)	0.003	0.17(0.06,0.48)	0.001	0.19(0.07,0.54)	0.002
Uterus §	progestogen (cont)	0.37(0.19,0.71)	0.003	0.38(0.19,0.74)	0.005	0.38(0.20,0.73)	0.004	0.35(0.19,0.67)	0.001	0.40(0.20,0.80)	0.010

† comorbidities include diabetes, myocardial infarction, coronary heart disease, heart failure, peripheral vascular disease, dementia, cerebrovascular disease, chronic obstructive pulmonary disease, osteoporosis, rheumatological disease, renal disease, liver disease, irritable bowel disease, human immunodeficiency viruses and hemiplegia/paraplegia, plus potential site-specific confounders; OR odds ratio; CI confidence interval; CNS: central nervous system; medicines systemic unless otherwise indicated\* (local); HRT: hormone replacement therapy; § females only; §§ males only

**Table S7: Sensitivity analyses for comorbidity<sup>†</sup> adjusted signals: exposure >=6 prescriptions**

Cancer	Medicine	1 year lag (main analysis)		2 year lag		Exclude matched sets where cases have additional cancer diagnosis within 12 months		Adjusted for comorbidities, smoking & alcohol	
		OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value
<b>Signals associated with increased cancer risk</b>									
Breast §	estrogen-HRT	1.36(1.27,1.45)	<0.001	1.31(1.22,1.41)	<0.001	1.35(1.26,1.45)	<0.001	1.32(1.21,1.43)	<0.001
Breast §	metronidazole*	2.21(1.21,4.03)	0.010	2.86(1.47,5.56)	0.002	2.21(1.21,4.03)	0.010	2.10(1.04,4.24)	0.038
Breast §	progestogen-HRT	1.50(1.40,1.62)	<0.001	1.47(1.36,1.59)	<0.001	1.50(1.39,1.61)	<0.001	1.47(1.34,1.61)	<0.001
Lung	amitriptyline	1.27(1.13,1.43)	<0.001	1.24(1.09,1.40)	0.001	1.28(1.14,1.45)	<0.001	1.25(1.08,1.46)	0.003
Lung	amoxicillin	1.44(1.30,1.60)	<0.001	1.45(1.29,1.63)	<0.001	1.44(1.30,1.60)	<0.001	1.38(1.22,1.58)	<0.001
Lung	azathioprine	1.88(1.30,2.70)	0.001	1.75(1.18,2.59)	0.005	1.85(1.28,2.67)	0.001	2.42(1.51,3.87)	<0.001
Lung	cimetidine	1.46(1.29,1.66)	<0.001	1.45(1.28,1.65)	<0.001	1.48(1.31,1.67)	<0.001	1.40(1.19,1.65)	<0.001
Lung	diazepam	1.29(1.11,1.50)	0.001	1.35(1.15,1.58)	<0.001	1.29(1.11,1.50)	0.001	1.04(0.85,1.27)	0.698
Lung	dihydrocodeine	1.40(1.27,1.54)	<0.001	1.42(1.28,1.57)	<0.001	1.40(1.27,1.54)	<0.001	1.26(1.11,1.43)	<0.001
Lung	folic acid §	1.50(1.21,1.86)	<0.001	1.58(1.24,2.01)	<0.001	1.51(1.21,1.88)	<0.001	1.41(1.06,1.88)	0.018
Lung	ipratropium*	1.63(1.45,1.84)	<0.001	1.58(1.39,1.80)	<0.001	1.65(1.46,1.86)	<0.001	1.56(1.33,1.83)	<0.001
Lung	nitrazepam	1.49(1.21,1.84)	<0.001	1.48(1.19,1.84)	<0.001	1.48(1.20,1.82)	<0.001	1.89(1.40,2.56)	<0.001
Lung	quinine	1.25(1.10,1.42)	0.001	1.22(1.06,1.40)	0.005	1.25(1.10,1.42)	<0.001	1.35(1.14,1.59)	<0.001
Lung	salbutamol*	1.41(1.30,1.53)	<0.001	1.36(1.24,1.48)	<0.001	1.42(1.31,1.54)	<0.001	1.39(1.24,1.55)	<0.001
Lung	salmeterol*	1.37(1.22,1.53)	<0.001	1.25(1.10,1.42)	0.001	1.37(1.22,1.54)	<0.001	1.42(1.23,1.65)	<0.001
Lung	temazepam	1.33(1.15,1.54)	<0.001	1.37(1.17,1.59)	<0.001	1.33(1.15,1.54)	<0.001	1.27(1.04,1.55)	0.018
Lung	tiotropium*	1.64(1.37,1.97)	<0.001	1.59(1.27,1.99)	<0.001	1.66(1.39,1.99)	<0.001	1.54(1.24,1.91)	<0.001
Lung	vitamin D*	1.45(1.10,1.91)	0.009	1.33(0.98,1.80)	0.065	1.45(1.10,1.92)	0.008	1.14(0.79,1.66)	0.477
Colorectal	allopurinol	1.35(1.16,1.57)	<0.001	1.37(1.17,1.61)	<0.001	1.31(1.12,1.53)	0.001	1.33(1.10,1.60)	0.004
Colorectal	aminophylline	1.93(1.31,2.83)	0.001	2.07(1.38,3.11)	<0.001	1.93(1.31,2.83)	0.001	2.38(1.40,4.05)	0.001
Colorectal	bisacodyl	1.79(1.24,2.59)	0.002	1.94(1.30,2.89)	0.001	1.84(1.27,2.66)	0.001	1.79(1.08,2.96)	0.023
Colorectal	dipyridamole	1.45(1.17,1.80)	0.001	1.54(1.22,1.95)	<0.001	1.46(1.18,1.81)	0.001	1.40(1.06,1.83)	0.016
Colorectal	mesalazine	1.65(1.18,2.30)	0.003	1.88(1.31,2.69)	0.001	1.66(1.18,2.33)	0.003	1.51(0.96,2.37)	0.071
Colorectal	perindopril	1.31(1.10,1.56)	0.003	1.31(1.07,1.60)	0.009	1.30(1.09,1.56)	0.004	1.31(1.06,1.61)	0.011
Colorectal	phenytoin	1.58(1.12,2.22)	0.009	1.56(1.09,2.22)	0.014	1.52(1.07,2.16)	0.018	1.63(1.01,2.61)	0.044
Prostate §§	cerivastatin	1.59(1.16,2.20)	0.004	1.57(1.12,2.21)	0.010	1.58(1.14,2.19)	0.006	1.60(1.08,2.36)	0.019
Prostate §§	clioquinol*	2.06(1.24,3.42)	0.005	2.35(1.36,4.04)	0.002	2.06(1.24,3.42)	0.005	1.94(1.06,3.56)	0.032
Bladder	amoxicillin	1.39(1.13,1.72)	0.002	1.41(1.11,1.80)	0.005	1.39(1.12,1.71)	0.002	1.34(1.05,1.70)	0.019
Bladder	nicotine	2.59(1.38,4.85)	0.003	2.43(1.13,5.23)	0.023	2.43(1.28,4.63)	0.007	2.30(1.16,4.56)	0.017
Bladder	trimethoprim	1.80(1.25,2.58)	0.001	1.49(0.97,2.29)	0.066	1.83(1.27,2.65)	0.001	2.12(1.41,3.20)	<0.001
Malignant melanoma	clopidogrel	1.86(1.21,2.88)	0.005	1.83(1.10,3.05)	0.020	1.80(1.15,2.81)	0.010	1.78(1.08,2.93)	0.024
Oesophagus	alginate acid	1.52(1.26,1.84)	<0.001	1.52(1.25,1.86)	<0.001	1.54(1.27,1.86)	<0.001	1.51(1.17,1.94)	0.001
Oesophagus	beclometasone*	1.37(1.14,1.65)	0.001	1.31(1.08,1.60)	0.007	1.37(1.13,1.66)	0.001	1.34(1.06,1.70)	0.016
Oesophagus	cisapride	2.89(1.41,5.92)	0.004	2.54(1.18,5.46)	0.017	2.90(1.42,5.95)	0.004	2.91(1.10,7.70)	0.031
Oesophagus	lansoprazole	1.67(1.39,2.01)	<0.001	1.69(1.38,2.06)	<0.001	1.65(1.37,1.99)	<0.001	1.52(1.21,1.91)	<0.001
Oesophagus	omeprazole	1.45(1.24,1.69)	<0.001	1.50(1.27,1.78)	<0.001	1.45(1.24,1.70)	<0.001	1.41(1.15,1.72)	0.001

Table S7 (cont)

Cancer	Medicine	1 year lag (main analysis)		2 year lag		Exclude matched sets where cases have additional cancer diagnosis within 12 months		Adjusted for comorbidities, smoking & alcohol	
		OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value
Oesophagus	risedronate sodium	2.54(1.27,5.05)	0.008	2.46(1.12,5.39)	0.025	2.43(1.20,4.90)	0.013	2.67(1.16,6.18)	0.021
Oesophagus	vitamin B	1.54(1.18,2.01)	0.001	1.65(1.24,2.20)	0.001	1.58(1.21,2.06)	0.001	1.33(0.94,1.87)	0.108
Oesophagus	warfarin	1.43(1.11,1.84)	0.005	1.41(1.07,1.85)	0.014	1.43(1.11,1.84)	0.006	1.52(1.10,2.09)	0.010
Non-Hodgkin's lymphoma	amoxicillin	1.46(1.12,1.92)	0.006	1.70(1.25,2.32)	0.001	1.52(1.15,2.00)	0.003	1.40(1.02,1.93)	0.039
Non-Hodgkin's lymphoma	azathioprine	2.58(1.31,5.08)	0.006	2.57(1.28,5.18)	0.008	2.66(1.35,5.25)	0.005	2.42(0.99,5.93)	0.053
Non-Hodgkin's lymphoma	gabapentin	2.86(1.47,5.58)	0.002	2.14(0.94,4.90)	0.070	2.97(1.51,5.81)	0.002	4.28(1.87,9.81)	0.001
Non-Hodgkin's lymphoma	methotrexate	3.41(1.57,7.41)	0.002	3.60(1.54,8.43)	0.003	3.41(1.57,7.43)	0.002	3.26(1.20,8.82)	0.020
Non-Hodgkin's lymphoma	phenoxymethylpenicillin	3.77(1.51,9.45)	0.005	4.09(1.47,11.39)	0.007	3.77(1.51,9.45)	0.005	3.39(0.93,12.37)	0.064
Leukaemia	allopurinol	1.68(1.24,2.27)	0.001	1.57(1.12,2.19)	0.009	1.65(1.21,2.24)	0.002	1.83(1.24,2.69)	0.002
Leukaemia	oxybutynin	2.35(1.41,3.92)	0.001	2.25(1.29,3.94)	0.004	2.35(1.41,3.93)	0.001	2.68(1.30,5.52)	0.007
Leukaemia	oxytetracycline	2.67(1.49,4.79)	0.001	3.19(1.74,5.84)	<0.001	2.52(1.39,4.56)	0.002	2.74(1.25,5.97)	0.011
Leukaemia	paracetamol	1.26(1.10,1.44)	0.001	1.22(1.05,1.41)	0.007	1.26(1.10,1.45)	0.001	1.36(1.13,1.63)	0.001
Oral (inc. Head,neck & nasal)	betamethasone*	1.69(1.15,2.48)	0.007	1.63(1.07,2.48)	0.023	1.75(1.19,2.58)	0.005	2.13(1.30,3.48)	0.003
Oral (inc. Head,neck & nasal)	folic acid §	3.79(2.09,6.89)	<0.001	2.78(1.43,5.38)	0.002	3.66(1.99,6.72)	<0.001	3.55(1.51,8.33)	0.004
Oral (inc. Head,neck & nasal)	vitamin A	3.84(1.68,8.79)	0.001	2.90(1.10,7.63)	0.031	3.83(1.67,8.79)	0.002	3.81(1.25,11.55)	0.018
Oral (inc. Head,neck & nasal)	vitamin B	3.09(2.31,4.14)	<0.001	3.08(2.23,4.25)	<0.001	3.12(2.32,4.21)	<0.001	2.07(1.40,3.06)	<0.001
Oral (inc. Head,neck & nasal)	vitamin C	4.43(2.05,9.56)	<0.001	2.63(1.03,6.74)	0.044	4.72(2.14,10.38)	<0.001	3.73(1.29,10.81)	0.015
Stomach	cimetidine	1.52(1.11,2.07)	0.008	1.46(1.06,2.03)	0.022	1.55(1.13,2.13)	0.007	2.35(0.72,7.69)	0.157
Ovary §	cyclopenthiazide	3.31(1.54,7.15)	0.002	3.77(1.70,8.36)	0.001	3.33(1.54,7.18)	0.002	4.36(1.51,12.59)	0.006
Ovary §	phenytoin	3.87(1.83,8.18)	<0.001	3.48(1.62,7.47)	0.001	3.90(1.85,8.24)	<0.001	3.02(1.30,7.06)	0.011
Ovary §	vitamin D*	2.66(1.30,5.45)	0.007	3.47(1.55,7.78)	0.002	2.84(1.38,5.85)	0.005	1.19(0.78,1.80)	0.425
Kidney	hydrochlorothiazide	2.26(1.46,3.48)	<0.001	2.55(1.63,4.00)	<0.001	2.34(1.51,3.61)	<0.001	2.28(1.35,3.85)	0.002
Kidney	nystatin*	2.25(1.23,4.13)	0.009	2.45(1.30,4.62)	0.006	2.25(1.22,4.13)	0.009	1.76(0.86,3.61)	0.123
Kidney	perindopril	1.87(1.25,2.81)	0.003	1.98(1.26,3.13)	0.003	2.00(1.32,3.03)	0.001	1.74(1.09,2.77)	0.020
Pancreas	clopidogrel	2.14(1.34,3.42)	0.001	1.81(1.05,3.10)	0.032	2.07(1.29,3.33)	0.003	1.75(0.95,3.24)	0.075
Pancreas	hydrochlorothiazide	1.84(1.16,2.90)	0.009	1.72(1.08,2.75)	0.023	1.71(1.07,2.73)	0.025	2.49(1.45,4.30)	0.001
Pancreas	metoclopramide	3.08(1.40,6.76)	0.005	3.43(1.49,7.88)	0.004	3.04(1.38,6.70)	0.006	1.95(1.11,3.44)	0.021
Pancreas	nicotine	3.61(1.55,8.43)	0.003	3.38(1.12,10.22)	0.031	4.46(1.84,10.79)	0.001	2.24(0.84,5.97)	0.107
Cervix & other gynae §	cimetidine	1.87(1.17,2.98)	0.009	1.98(1.21,3.23)	0.007	1.79(1.10,2.92)	0.020	1.92(0.74,5.00)	0.183
Uterus §	atenolol	1.40(1.14,1.71)	0.001	1.42(1.15,1.75)	0.001	1.43(1.17,1.75)	0.001	1.29(1.01,1.65)	0.044
Uterus §	bendroflumethiazide	1.33(1.10,1.61)	0.003	1.35(1.11,1.65)	0.003	1.34(1.10,1.62)	0.003	1.33(1.06,1.68)	0.015
Uterus §	bismuth*	6.56(1.64,26.17)	0.008	17.32(1.54,194.62)	0.021	6.73(1.69,26.90)	0.007	6.83(1.12,41.51)	0.037
Uterus §	dextropropoxyphene	1.43(1.11,1.83)	0.005	1.41(1.09,1.83)	0.010	1.38(1.07,1.78)	0.013	1.37(0.99,1.89)	0.057
Uterus §	doxazosin	2.21(1.43,3.43)	<0.001	2.22(1.37,3.61)	0.001	2.26(1.45,3.53)	<0.001	1.91(1.14,3.19)	0.014
Uterus §	enalapril	1.78(1.21,2.62)	0.003	2.02(1.35,3.01)	0.001	1.89(1.28,2.79)	0.001	2.49(1.54,4.03)	<0.001



Table S7 (cont)

Cancer	Medicine	1 year lag (main analysis)		2 year lag		Exclude matched sets where cases have additional cancer diagnosis within 12 months		Adjusted for comorbidities, smoking & alcohol	
		OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value
Uterus §	losartan potassium	2.00(1.24,3.23)	0.005	2.17(1.28,3.68)	0.004	2.01(1.24,3.25)	0.004	2.06(1.18,3.59)	0.011
Uterus §	peru balsam*	6.56(1.64,26.17)	0.008	17.32(1.54,194.62)	0.021	6.73(1.69,26.90)	0.007	6.83(1.12,41.51)	0.037
Uterus §	salicylic acid*	4.31(1.53,12.08)	0.006	8.12(2.44,26.96)	0.001	4.31(1.53,12.09)	0.006	7.75(2.20,27.28)	0.001
Larynx	cimetidine	2.12(1.36,3.32)	0.001	2.32(1.46,3.70)	<0.001	2.06(1.30,3.27)	0.002	1.87(0.81,4.32)	0.143
Larynx	vitamin B	2.20(1.41,3.41)	<0.001	2.16(1.33,3.51)	0.002	2.30(1.46,3.62)	<0.001	2.43(1.28,4.61)	0.007
Brain and CNS	carbamazepine	3.02(1.59,5.71)	0.001	2.80(1.43,5.48)	0.003	3.21(1.68,6.12)	<0.001	1.23(0.67,2.24)	0.504
Myeloma	mometasone*	3.45(1.40,8.50)	0.007	3.26(1.18,8.99)	0.023	4.02(1.61,10.09)	0.003	2.54(0.70,9.16)	0.155
Liver	furosemide	1.98(1.35,2.91)	0.001	1.91(1.28,2.85)	0.002	2.08(1.41,3.07)	<0.001	2.46(1.48,4.10)	0.001
Liver	mometasone*	3.82(1.42,10.26)	0.008	2.92(1.00,8.53)	0.050	3.82(1.42,10.27)	0.008	3.12(1.01,9.68)	0.049
Liver	pravastatin	2.26(1.24,4.11)	0.008	2.14(1.11,4.12)	0.023	2.26(1.24,4.13)	0.008	2.08(1.05,4.12)	0.036
Thyroid	levothyroxine	2.30(1.40,3.76)	0.001	2.42(1.42,4.12)	0.001	2.40(1.46,3.96)	0.001	2.46(1.26,4.80)	0.008
Thyroid	progestogen-HRT §	2.52(1.33,4.78)	0.005	2.32(1.15,4.65)	0.018	2.52(1.33,4.78)	0.005	1.99(0.88,4.54)	0.100
Anal	doxazosin	3.19(1.44,7.06)	0.004	2.98(1.22,7.30)	0.017	3.13(1.37,7.17)	0.007	2.74(1.01,7.39)	0.047
Anal	nicotine	9.95(2.22,44.53)	0.003	5.43(0.70,42.17)	0.106	9.34(1.86,46.78)	0.007	5.79(0.93,35.94)	0.059
<b>Signals associated with decreased cancer risk</b>									
Breast §	carbamazepine	0.70(0.55,0.90)	0.005	0.66(0.50,0.86)	0.003	0.71(0.56,0.91)	0.007	0.81(0.60,1.10)	0.172
Breast §	iron	0.78(0.67,0.92)	0.003	0.72(0.60,0.87)	<0.001	0.78(0.66,0.92)	0.003	0.72(0.59,0.89)	0.002
Breast §	prednisolone	0.78(0.66,0.92)	0.004	0.78(0.65,0.95)	0.012	0.78(0.66,0.93)	0.006	0.82(0.66,1.01)	0.061
Breast §	trimethoprim	0.72(0.57,0.91)	0.005	0.78(0.60,1.02)	0.069	0.72(0.57,0.91)	0.006	0.71(0.54,0.92)	0.011
Lung	benzalkonium*	0.49(0.29,0.83)	0.008	0.45(0.24,0.82)	0.009	0.51(0.30,0.86)	0.012	0.62(0.31,1.24)	0.174
Lung	dimeticone*	0.46(0.27,0.80)	0.005	0.41(0.22,0.77)	0.006	0.48(0.28,0.82)	0.008	0.56(0.27,1.15)	0.112
Lung	levodopa	0.38(0.24,0.61)	<0.001	0.32(0.18,0.56)	<0.001	0.36(0.22,0.58)	<0.001	0.47(0.26,0.85)	0.013
Colorectal	diclofenac	0.71(0.63,0.80)	<0.001	0.71(0.62,0.81)	<0.001	0.71(0.63,0.81)	<0.001	0.68(0.59,0.79)	<0.001
Colorectal	lactulose	0.78(0.68,0.90)	0.001	0.77(0.65,0.90)	0.001	0.78(0.68,0.91)	0.001	0.76(0.62,0.92)	0.005
Colorectal	misoprostol	0.69(0.53,0.88)	0.003	0.64(0.49,0.84)	0.001	0.70(0.54,0.89)	0.005	0.56(0.40,0.78)	0.001
Colorectal	naproxen	0.72(0.57,0.89)	0.003	0.66(0.52,0.85)	0.001	0.73(0.58,0.91)	0.005	0.72(0.56,0.94)	0.017
Colorectal	senna	0.73(0.60,0.90)	0.003	0.75(0.60,0.95)	0.015	0.72(0.59,0.89)	0.002	0.77(0.59,1.00)	0.047
Prostate §§	benzalkonium*	0.36(0.17,0.77)	0.009	0.33(0.14,0.79)	0.013	0.38(0.18,0.82)	0.014	0.37(0.14,0.98)	0.044
Prostate §§	bumetanide	0.57(0.38,0.86)	0.007	0.50(0.32,0.78)	0.002	0.60(0.40,0.90)	0.013	0.75(0.46,1.20)	0.227
Prostate §§	citalopram	0.59(0.43,0.81)	0.001	0.57(0.39,0.82)	0.002	0.58(0.42,0.80)	0.001	0.59(0.41,0.86)	0.006
Prostate §§	dimeticone*	0.36(0.17,0.77)	0.009	0.33(0.14,0.79)	0.013	0.38(0.18,0.82)	0.014	0.39(0.15,1.01)	0.053
Prostate §§	furosemide	0.70(0.61,0.79)	<0.001	0.68(0.59,0.78)	<0.001	0.70(0.62,0.79)	<0.001	0.74(0.63,0.87)	<0.001
Prostate §§	iron	0.72(0.57,0.92)	0.008	0.64(0.48,0.86)	0.003	0.71(0.56,0.90)	0.006	0.76(0.56,1.04)	0.084
Prostate §§	lactulose	0.68(0.57,0.81)	<0.001	0.70(0.57,0.86)	0.001	0.67(0.56,0.81)	<0.001	0.70(0.56,0.88)	0.003
Prostate §§	lidocaine*	0.35(0.16,0.75)	0.007	0.37(0.16,0.85)	0.019	0.35(0.16,0.75)	0.007	0.52(0.20,1.31)	0.166
Prostate §§	risperidone	0.27(0.11,0.70)	0.007	0.21(0.06,0.71)	0.012	0.29(0.11,0.75)	0.011	0.31(0.09,1.08)	0.065

**Table S7 (cont)**

Cancer	Medicine	1 year lag (main analysis)		2 year lag		Exclude matched sets where cases have additional cancer diagnosis within 12 months		Adjusted for comorbidities, smoking & alcohol	
		OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value
Prostate §§	senna	0.70(0.55,0.90)	0.005	0.69(0.52,0.92)	0.012	0.70(0.54,0.90)	0.006	0.73(0.54,0.99)	0.046
Prostate §§	vitamin D	0.66(0.50,0.88)	0.004	0.66(0.47,0.94)	0.019	0.64(0.48,0.86)	0.003	0.62(0.44,0.87)	0.005
Bladder	iron	0.64(0.47,0.88)	0.006	0.65(0.46,0.93)	0.018	0.64(0.46,0.87)	0.005	0.63(0.42,0.95)	0.028
Bladder	lactulose	0.73(0.58,0.91)	0.006	0.70(0.54,0.90)	0.006	0.72(0.57,0.90)	0.005	0.81(0.60,1.07)	0.140
Malignant melanoma	gliclazide	0.51(0.31,0.84)	0.009	0.60(0.36,1.03)	0.062	0.53(0.32,0.88)	0.014	0.45(0.25,0.80)	0.007
Non-Hodgkin's lymphoma	vitamin B	0.51(0.34,0.78)	0.002	0.55(0.35,0.86)	0.009	0.52(0.34,0.79)	0.002	0.58(0.34,0.98)	0.041
Ovary §	nifedipine	0.56(0.38,0.83)	0.004	0.62(0.41,0.93)	0.021	0.57(0.39,0.85)	0.006	0.59(0.37,0.96)	0.034
Ovary §	progestogen-contraceptive	0.44(0.23,0.81)	0.009	0.33(0.16,0.69)	0.003	0.46(0.25,0.87)	0.016	0.50(0.26,0.99)	0.047
Stomach	finasteride §§	0.41(0.21,0.81)	0.010	0.32(0.15,0.70)	0.004	0.42(0.21,0.82)	0.012	0.43(0.19,0.96)	0.038
Uterus §	estrogen-HRT	0.68(0.53,0.87)	0.002	0.72(0.56,0.93)	0.012	0.68(0.53,0.88)	0.003	0.75(0.56,0.99)	0.045
Larynx	diclofenac	0.48(0.29,0.78)	0.003	0.53(0.31,0.90)	0.019	0.49(0.30,0.81)	0.006	0.62(0.33,1.15)	0.128
Larynx	doxazosin	0.31(0.14,0.71)	0.006	0.33(0.14,0.80)	0.014	0.31(0.14,0.71)	0.006	0.37(0.13,1.06)	0.064

† comorbidities include diabetes, myocardial infarction, coronary heart disease, heart failure, peripheral vascular disease, dementia, cerebrovascular disease, chronic obstructive pulmonary disease, osteoporosis, rheumatological disease, renal disease, liver disease, irritable bowel disease, human immunodeficiency viruses and hemiplegia/paraplegia, plus potential site-specific confounders; OR odds ratio; CI confidence interval; CNS: central nervous system; medicines systemic unless otherwise indicated\* (local); HRT: hormone replacement therapy; § females only; §§ males only

**Table S8: Sensitivity analyses for comorbidity<sup>†</sup> & smoking adjusted signals: exposure  $\geq 6$  prescriptions**

Cancer	Medicine	1 year lag (main analysis)		2 year lag		Exclude matched sets where cases have additional cancer diagnosis within 12 months		1 year lag with multiple imputation		Adjusted for comorbidities smoking & alcohol	
		OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value
<b>Signals associated with increased cancer risk</b>											
Breast §	estrogen (HRT)	1.32(1.23,1.43)	<0.001	1.30(1.20,1.41)	<0.001	1.32(1.23,1.43)	<0.001	1.36(1.27,1.45)	<0.001	1.32(1.21,1.43)	<0.001
Breast §	metronidazole*	2.36(1.25,4.46)	0.008	3.46(1.66,7.21)	0.001	2.36(1.25,4.46)	0.008	2.20(1.20,4.01)	0.010	2.10(1.04,4.24)	0.038
Breast §	progesterone (HRT)	1.48(1.37,1.61)	<0.001	1.45(1.32,1.58)	<0.001	1.48(1.37,1.61)	<0.001	1.50(1.40,1.62)	<0.001	1.47(1.34,1.61)	<0.001
Lung	amitriptyline	1.25(1.09,1.44)	0.001	1.22(1.05,1.41)	0.010	1.27(1.10,1.45)	0.001	1.19(1.05,1.35)	0.008	1.26(1.08,1.46)	0.003
Lung	amoxicillin	1.36(1.21,1.53)	<0.001	1.38(1.21,1.58)	<0.001	1.36(1.20,1.53)	<0.001	1.39(1.24,1.56)	<0.001	1.38(1.21,1.57)	<0.001
Lung	azathioprine	2.30(1.49,3.56)	<0.001	2.36(1.45,3.83)	0.001	2.24(1.44,3.47)	<0.001	2.11(1.43,3.11)	<0.001	2.46(1.54,3.96)	<0.001
Lung	cimetidine	1.37(1.18,1.58)	<0.001	1.26(1.07,1.47)	0.004	1.38(1.19,1.60)	<0.001	1.32(1.16,1.51)	<0.001	1.41(1.20,1.66)	<0.001
Lung	dihydrocodeine	1.28(1.15,1.44)	<0.001	1.30(1.15,1.47)	<0.001	1.28(1.14,1.43)	<0.001	1.31(1.18,1.45)	<0.001	1.26(1.11,1.43)	<0.001
Lung	fluticasone*	1.41(1.24,1.61)	<0.001	1.35(1.16,1.56)	<0.001	1.42(1.24,1.62)	<0.001	1.40(1.23,1.58)	<0.001	1.38(1.19,1.60)	<0.001
Lung	ipratropium*	1.56(1.35,1.79)	<0.001	1.55(1.33,1.81)	<0.001	1.59(1.38,1.83)	<0.001	1.56(1.37,1.77)	<0.001	1.56(1.33,1.83)	<0.001
Lung	nitrazepam	1.58(1.22,2.05)	0.001	1.66(1.27,2.19)	<0.001	1.58(1.22,2.04)	0.001	1.44(1.15,1.81)	0.002	1.85(1.36,2.51)	<0.001
Lung	phenoxymethylpenicillin	2.89(1.52,5.50)	0.001	2.96(1.47,5.97)	0.002	2.89(1.52,5.51)	0.001	2.05(1.14,3.68)	0.016	3.47(1.73,6.99)	<0.001
Lung	quinine	1.31(1.13,1.52)	<0.001	1.32(1.12,1.56)	0.001	1.32(1.13,1.53)	<0.001	1.28(1.12,1.47)	<0.001	1.35(1.14,1.59)	<0.001
Lung	salbutamol*	1.36(1.24,1.50)	<0.001	1.30(1.17,1.44)	<0.001	1.37(1.25,1.51)	<0.001	1.39(1.27,1.52)	<0.001	1.38(1.24,1.54)	<0.001
Lung	salmeterol*	1.51(1.32,1.72)	<0.001	1.38(1.19,1.60)	<0.001	1.52(1.33,1.73)	<0.001	1.50(1.33,1.70)	<0.001	1.42(1.23,1.65)	<0.001
Lung	tiotropium*	1.52(1.25,1.85)	<0.001	1.44(1.13,1.84)	0.003	1.54(1.26,1.87)	<0.001	1.54(1.28,1.87)	<0.001	1.52(1.22,1.88)	<0.001
Colorectal	allopurinol	1.33(1.12,1.59)	0.001	1.34(1.11,1.62)	0.003	1.29(1.08,1.53)	0.005	1.33(1.14,1.55)	<0.001	1.33(1.10,1.61)	0.004
Colorectal	aminophylline	1.89(1.17,3.05)	0.009	2.07(1.26,3.42)	0.004	1.88(1.16,3.03)	0.010	1.87(1.27,2.75)	0.001	2.39(1.40,4.06)	0.001
Colorectal	dipyridamole	1.44(1.13,1.83)	0.004	1.50(1.14,1.97)	0.004	1.44(1.12,1.83)	0.004	1.44(1.16,1.78)	0.001	1.40(1.07,1.84)	0.016
Colorectal	tiotropium*	1.49(1.11,1.99)	0.007	1.21(0.83,1.77)	0.314	1.51(1.13,2.03)	0.005	1.34(1.01,1.78)	0.040	1.43(1.04,1.96)	0.028
Prostate §§	alfuzosin	1.63(1.25,2.13)	<0.001	1.55(1.13,2.12)	0.006	1.55(1.18,2.04)	0.002	1.66(1.31,2.10)	<0.001	1.71(1.28,2.29)	<0.001
Prostate §§	atorvastatin	1.25(1.11,1.42)	<0.001	1.29(1.12,1.48)	<0.001	1.26(1.11,1.43)	<0.001	1.25(1.11,1.40)	<0.001	1.26(1.10,1.44)	0.001
Prostate §§	clioquinol*	2.09(1.19,3.66)	0.010	2.69(1.45,4.99)	0.002	2.09(1.20,3.67)	0.010	2.08(1.25,3.45)	0.005	1.94(1.06,3.57)	0.032
Bladder	amoxicillin	1.45(1.16,1.81)	0.001	1.45(1.11,1.87)	0.005	1.46(1.16,1.83)	0.001	1.37(1.12,1.69)	0.003	1.33(1.04,1.69)	0.022
Bladder	cefalexin	1.99(1.23,3.20)	0.005	1.95(1.11,3.46)	0.021	1.97(1.21,3.20)	0.006	1.83(1.17,2.88)	0.009	1.84(1.07,3.15)	0.027
Bladder	celecoxib	1.78(1.20,2.63)	0.004	1.87(1.20,2.92)	0.006	1.74(1.17,2.60)	0.007	1.59(1.09,2.32)	0.015	1.63(1.06,2.50)	0.027
Bladder	ranitidine	1.28(1.07,1.54)	0.008	1.30(1.06,1.59)	0.012	1.26(1.04,1.52)	0.017	1.24(1.05,1.46)	0.010	1.36(1.11,1.66)	0.003
Bladder	trimethoprim	2.04(1.39,3.00)	<0.001	1.78(1.12,2.84)	0.015	2.07(1.40,3.06)	<0.001	1.82(1.27,2.63)	0.001	2.14(1.42,3.23)	<0.001
Oesophagus	alginate acid	1.53(1.22,1.91)	<0.001	1.65(1.29,2.11)	<0.001	1.54(1.22,1.93)	<0.001	1.53(1.26,1.85)	<0.001	1.50(1.17,1.93)	0.001
Oesophagus	azathioprine	4.15(1.87,9.22)	<0.001	4.41(1.80,10.80)	0.001	4.13(1.86,9.16)	<0.001	2.86(1.43,5.73)	0.003	3.08(1.19,7.97)	0.020
Oesophagus	lansoprazole	1.59(1.30,1.95)	<0.001	1.55(1.23,1.95)	<0.001	1.57(1.28,1.93)	<0.001	1.63(1.36,1.97)	<0.001	1.54(1.22,1.93)	<0.001
Oesophagus	omeprazole	1.40(1.17,1.66)	<0.001	1.45(1.19,1.77)	<0.001	1.39(1.16,1.66)	<0.001	1.46(1.24,1.71)	<0.001	1.42(1.16,1.73)	0.001
Oesophagus	prednisolone	1.68(1.19,2.38)	0.003	1.50(1.02,2.21)	0.037	1.69(1.18,2.41)	0.004	1.25(0.92,1.71)	0.157	1.70(1.16,2.50)	0.007
Oesophagus	risedronate sodium	2.69(1.28,5.67)	0.009	3.11(1.30,7.46)	0.011	2.53(1.18,5.41)	0.017	2.68(1.32,5.41)	0.006	2.67(1.16,6.16)	0.021

**Table S8 (cont)**

Cancer	Medicine	1 year lag (main analysis)		2 year lag		Exclude matched sets where cases have additional cancer diagnosis within 12 months		1 year lag with multiple imputation		Adjusted for comorbidities smoking & alcohol	
		OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value
Non-Hodgkin's lymphoma	amoxicillin	1.50(1.13,2.00)	0.006	1.77(1.28,2.46)	0.001	1.57(1.17,2.09)	0.002	1.45(1.11,1.91)	0.007	1.40(1.02,1.93)	0.039
Non-Hodgkin's lymphoma	gabapentin	3.41(1.67,6.96)	0.001	2.72(1.13,6.57)	0.026	3.54(1.72,7.28)	0.001	2.83(1.45,5.51)	0.002	4.27(1.86,9.78)	0.001
Leukaemia	metoclopramide	2.61(1.34,5.11)	0.005	2.31(1.05,5.08)	0.037	2.74(1.40,5.40)	0.003	2.09(1.15,3.78)	0.015	2.48(1.23,5.00)	0.011
Leukaemia	oxybutynin	2.69(1.42,5.08)	0.002	2.50(1.26,4.99)	0.009	2.67(1.42,5.05)	0.002	2.35(1.41,3.93)	0.001	2.68(1.30,5.52)	0.007
Leukaemia	oxytetracycline	3.01(1.49,6.07)	0.002	3.05(1.45,6.42)	0.003	2.83(1.38,5.80)	0.004	2.66(1.48,4.78)	0.001	2.74(1.25,5.98)	0.011
Leukaemia	paracetamol	1.34(1.14,1.57)	<0.001	1.29(1.08,1.54)	0.005	1.34(1.14,1.58)	<0.001	1.26(1.10,1.44)	0.001	1.36(1.13,1.63)	0.001
Oral (inc. Head,neck & nasal)	hydrochlorothiazide	2.56(1.34,4.89)	0.005	2.54(1.27,5.09)	0.009	2.61(1.36,5.00)	0.004	2.29(1.29,4.08)	0.005	2.45(1.19,5.04)	0.015
Oral (inc. Head,neck & nasal)	hydrocortisone*	1.66(1.17,2.35)	0.004	1.38(0.93,2.06)	0.113	1.66(1.18,2.36)	0.004	1.50(1.09,2.06)	0.014	1.68(1.14,2.46)	0.009
Oral (inc. Head,neck & nasal)	vitamin B	2.55(1.79,3.63)	<0.001	2.60(1.76,3.85)	<0.001	2.60(1.81,3.74)	<0.001	2.60(1.92,3.54)	<0.001	2.07(1.40,3.07)	<0.001
Oral (inc. Head,neck & nasal)	vitamin C	3.63(1.42,9.25)	0.007	1.89(0.62,5.83)	0.265	3.61(1.41,9.25)	0.007	3.84(1.73,8.51)	0.001	3.74(1.29,10.84)	0.015
Ovary §	phenytoin	4.31(1.74,10.65)	0.002	3.40(1.30,8.89)	0.013	4.31(1.74,10.66)	0.002	3.83(1.81,8.10)	<0.001	4.34(1.50,12.54)	0.007
Stomach	chlorphenamine	4.72(1.64,13.56)	0.004	3.56(1.19,10.65)	0.023	3.85(1.26,11.75)	0.018	2.99(1.25,7.16)	0.014	4.51(1.30,15.65)	0.018
Kidney	hydrochlorothiazide	2.61(1.63,4.18)	<0.001	3.32(2.00,5.53)	<0.001	2.73(1.70,4.40)	<0.001	2.30(1.49,3.55)	<0.001	2.29(1.35,3.87)	0.002
Kidney	perindopril	1.94(1.25,2.99)	0.003	2.00(1.22,3.29)	0.006	2.10(1.35,3.28)	0.001	1.88(1.25,2.83)	0.003	1.73(1.09,2.76)	0.021
Pancreas	clopidogrel	2.37(1.45,3.86)	0.001	1.86(1.05,3.29)	0.033	2.27(1.38,3.73)	0.001	2.04(1.27,3.27)	0.003	2.49(1.44,4.29)	0.001
Pancreas	lorazepam	3.59(1.41,9.18)	0.008	2.74(1.02,7.35)	0.046	3.58(1.40,9.16)	0.008	2.96(1.27,6.92)	0.012	4.06(1.32,12.52)	0.015
Pancreas	methotrexate	4.39(1.57,12.26)	0.005	3.93(1.33,11.62)	0.013	4.26(1.52,11.90)	0.006	3.23(1.20,8.69)	0.020	5.16(1.49,17.95)	0.010
Pancreas	quinine	1.78(1.18,2.68)	0.006	1.51(0.95,2.38)	0.079	1.71(1.13,2.60)	0.011	1.57(1.08,2.27)	0.017	1.76(1.11,2.80)	0.016
Uterus §	bendroflumethiazide	1.32(1.07,1.63)	0.009	1.29(1.03,1.61)	0.027	1.32(1.06,1.63)	0.011	1.29(1.07,1.57)	0.008	1.34(1.06,1.68)	0.014
Uterus §	doxazosin	1.88(1.18,3.00)	0.008	2.11(1.26,3.54)	0.005	1.84(1.15,2.95)	0.011	2.17(1.40,3.36)	0.001	1.91(1.15,3.19)	0.013
Uterus §	enalapril	2.35(1.53,3.60)	<0.001	2.62(1.69,4.06)	<0.001	2.53(1.64,3.89)	<0.001	1.78(1.21,2.62)	0.004	2.49(1.54,4.02)	<0.001
Uterus §	loperamide	2.88(1.36,6.09)	0.006	3.48(1.54,7.91)	0.003	2.61(1.21,5.64)	0.015	2.30(1.16,4.55)	0.017	3.09(1.35,7.08)	0.008
Uterus §	salicylic acid*	6.85(2.15,21.83)	0.001	9.95(2.73,36.24)	<0.001	6.92(2.16,22.16)	0.001	4.33(1.53,12.23)	0.006	7.79(2.23,27.23)	0.001
Myeloma	chlortalidone	3.06(1.32,7.12)	0.009	3.26(1.38,7.72)	0.007	3.00(1.29,6.96)	0.011	1.96(0.94,4.08)	0.071	3.34(1.28,8.72)	0.014
Liver	furosemide	2.48(1.58,3.88)	<0.001	2.45(1.50,4.01)	<0.001	2.57(1.63,4.05)	<0.001	2.05(1.39,3.02)	<0.001	2.49(1.50,4.14)	<0.001
Thyroid	progestogen (HRT) §	2.55(1.27,5.11)	0.008	2.22(1.05,4.68)	0.036	2.54(1.26,5.09)	0.009	2.48(1.30,4.74)	0.006	1.97(0.86,4.48)	0.108
Anal	bisoprolol	3.30(1.34,8.14)	0.010	2.81(1.08,7.34)	0.035	2.71(1.03,7.17)	0.044	2.79(1.18,6.58)	0.019	2.41(0.85,6.83)	0.098
Anal	nicotine	8.07(1.69,38.46)	0.009	4.37(0.53,36.35)	0.173	8.36(1.47,47.39)	0.016	7.75(1.70,35.29)	0.008	5.80(0.94,35.87)	0.059
<b>Signals associated with decreased cancer risk</b>											
Breast §	iron	0.72(0.60,0.86)	<0.001	0.67(0.54,0.82)	<0.001	0.72(0.60,0.86)	<0.001	0.78(0.67,0.92)	0.002	0.72(0.59,0.89)	0.002
Breast §	trazodone	0.62(0.46,0.85)	0.003	0.64(0.44,0.91)	0.014	0.62(0.46,0.85)	0.003	0.72(0.55,0.94)	0.016	0.66(0.47,0.92)	0.013

Table S8 (cont)

Cancer	Medicine	1 year lag (main analysis)		2 year lag		Exclude matched sets where cases have additional cancer diagnosis within 12 months		1 year lag with multiple imputation		Adjusted for comorbidities smoking & alcohol	
		OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	cancer	medicine	OR (95%CI)	p-value	OR (95%CI)
Breast §	trimethoprim	0.71(0.55,0.90)	0.005	0.75(0.57,1.00)	0.051	0.71(0.55,0.90)	0.006	0.72(0.57,0.91)	0.005	0.71(0.54,0.92)	0.011
Colorectal	diclofenac	0.72(0.63,0.83)	<0.001	0.71(0.61,0.82)	<0.001	0.72(0.63,0.83)	<0.001	0.71(0.63,0.80)	<0.001	0.68(0.59,0.79)	<0.001
Colorectal	lactulose	0.77(0.65,0.91)	0.003	0.81(0.67,0.98)	0.033	0.78(0.65,0.92)	0.004	0.78(0.68,0.90)	0.001	0.76(0.62,0.92)	0.005
Colorectal	naproxen	0.71(0.56,0.91)	0.007	0.63(0.48,0.84)	0.001	0.73(0.57,0.93)	0.011	0.71(0.57,0.89)	0.003	0.72(0.55,0.94)	0.016
Colorectal	oxybutynin	0.60(0.42,0.87)	0.006	0.65(0.44,0.95)	0.028	0.60(0.42,0.87)	0.007	0.71(0.52,0.95)	0.023	0.57(0.38,0.87)	0.009
Prostate §§	calcium	0.67(0.51,0.89)	0.006	0.71(0.51,0.99)	0.046	0.68(0.51,0.90)	0.008	0.74(0.57,0.95)	0.020	0.72(0.53,0.98)	0.038
Prostate §§	citalopram	0.53(0.37,0.75)	<0.001	0.59(0.39,0.87)	0.008	0.52(0.36,0.74)	<0.001	0.58(0.43,0.80)	0.001	0.59(0.41,0.86)	0.006
Prostate §§	furosemide	0.74(0.64,0.85)	<0.001	0.73(0.62,0.86)	<0.001	0.75(0.65,0.86)	<0.001	0.69(0.61,0.78)	<0.001	0.74(0.63,0.86)	<0.001
Prostate §§	lactulose	0.70(0.57,0.86)	0.001	0.73(0.58,0.93)	0.010	0.69(0.56,0.85)	0.001	0.68(0.57,0.81)	<0.001	0.70(0.56,0.88)	0.003
Prostate §§	senna	0.67(0.50,0.90)	0.007	0.73(0.53,1.02)	0.069	0.67(0.50,0.90)	0.007	0.70(0.54,0.90)	0.005	0.73(0.54,0.99)	0.046
Prostate §§	vitamin D	0.60(0.44,0.82)	0.001	0.61(0.41,0.89)	0.011	0.59(0.43,0.81)	0.001	0.66(0.50,0.88)	0.004	0.62(0.44,0.87)	0.005
Bladder	pantoprazole	0.27(0.10,0.71)	0.008	0.31(0.10,0.92)	0.035	0.27(0.10,0.71)	0.008	0.37(0.15,0.91)	0.030	0.31(0.11,0.86)	0.024
Bladder	sotalol	0.25(0.09,0.71)	0.010	0.20(0.06,0.68)	0.010	0.21(0.06,0.68)	0.010	0.36(0.16,0.81)	0.014	0.18(0.05,0.61)	0.006
Oesophagus	aspirin high dose	0.52(0.33,0.83)	0.006	0.53(0.32,0.88)	0.014	0.55(0.35,0.88)	0.013	0.59(0.40,0.87)	0.007	0.59(0.36,0.97)	0.038
Non-Hodgkin's lymphoma	vitamin B	0.51(0.32,0.81)	0.004	0.58(0.35,0.95)	0.029	0.50(0.31,0.80)	0.004	0.51(0.33,0.77)	0.002	0.58(0.34,0.97)	0.040
Leukaemia	calcium	0.56(0.37,0.85)	0.007	0.40(0.24,0.68)	0.001	0.57(0.38,0.88)	0.010	0.68(0.48,0.97)	0.034	0.55(0.35,0.87)	0.011
Stomach	diclofenac*	0.18(0.05,0.63)	0.007	0.23(0.07,0.78)	0.019	0.20(0.06,0.69)	0.011	0.41(0.17,0.98)	0.045	0.20(0.06,0.72)	0.014
Kidney	digoxin	0.43(0.23,0.80)	0.008	0.41(0.20,0.84)	0.014	0.39(0.20,0.75)	0.005	0.58(0.35,0.95)	0.031	0.44(0.22,0.88)	0.020

† comorbidities include diabetes, myocardial infarction, coronary heart disease, heart failure, peripheral vascular disease, dementia, cerebrovascular disease, chronic obstructive pulmonary disease, osteoporosis, rheumatological disease, renal disease, liver disease, irritable bowel disease, human immunodeficiency viruses and hemiplegia/paraplegia, plus potential site-specific confounders; OR odds ratio; CI confidence interval; medicines systemic unless otherwise indicated\* (local); HRT: hormone replacement therapy; § females only; §§ males only