AUSTRALIAN CHILD HEALTH AND AIR POLLUTION STUDY (ACHAPS)

FINAL REPORT
APPENDICES FOR PART C

December 17 2010

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

1. Distribution of air pollutants for Panel Study

Table 1.1. Descriptive statistics for air pollutants by air quality monitor, ACHAPS Panel Study

Site	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
1	PM10 24 hr	364	15.3	10.32	13.38	2.91	119.21	10.01
	PM2.5 24 hr	212	7.48	6.75	5.35	0.12	45.69	5.43
	O3 1 hr	365	35.77	10.93	32.37	7.61	75.42	14.42
	O3 4 hr	366	34.17	10.4	31.38	5.83	72.03	13.41
	O3 8 hr	366	31.29	9.95	29.9	3.53	61.6	12.28
	NO21hr	358	17.53	8.37	18.35	0.99	39.08	12.06
	NO224hr	358	6.57	3.53	6.21	0.6	15.55	5.37
	CO 8 hr	357	0.61	0.58	0.37	0.06	2.7	0.51
	SO2 1 hr	0	.	.	.	.	.	.
	SO2 24 hr	0	.	.	.	.	.	.
	Mean temperature	94	20.35	3.37	20.78	11.78	28.41	4.37
10	PM10 24 hr	364	19.78	7.31	18.64	7.18	52.48	8
	PM2.5 24 hr	0	.	.	.	.	.	.
	O3 1 hr	0	.	.	.	.	.	.
	O3 4 hr	0	.	.	.	.	.	.
	O3 8 hr	0	.	.	.	.	.	.
	NO21hr	362	26.65	10.1	25	7	69	14
	NO224hr	0	.	.	.	.	.	.
	CO 8 hr	365	0.52	0.38	0.4	0.07	2.73	0.33
	SO2 1 hr	0	.	.	.	.	.	.
	SO2 24 hr	0	.	.	.	.	.	.
	Mean temperature	364	21.84	3.88	22.6	11.52	29.68	5.86
11	PM10 24 hr	365	17.4	7.13	16.58	2.68	53.41	7.51
	PM2.5 24 hr	365	6.73	3.09	6.26	1.67	23.59	3.14
	O3 1 hr	349	34.05	10.06	33	9	76	10
	O3 4 hr	351	31.78	8.97	31	9.33	67	9.75
	O3 8 hr	351	28.37	7.7	27.88	9.14	67	8.39
	NO21hr	365	17.3	8.83	15	2	44	11
	NO224hr	365	8.18	4.46	6.91	0.39	22.09	5.91

Site	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
	CO 8 hr	0	.	.	.	.	.	.
	SO2 1 hr	0	.	.	.	.	.	.
	SO2 24 hr	0	.	.	.	.	.	.
	Mean temperature	365	20.06	3.92	20.93	9.5	27.97	6.3
12	PM10 24 hr	365	15.7	6.57	14.38	4.4	49.28	6.55
	PM2.5 24 hr	364	5.01	2.5	4.54	0.2	17.87	2.88
	O3 1 hr	364	20.6	5.98	20	6	42	8
	O3 4 hr	365	19.07	5.5	18.75	5.25	38.5	7
	O3 8 hr	366	17.57	4.78	17.13	7.63	31.38	6.13
	NO21hr	365	16.45	7.71	15	1	42	11
	NO224hr	365	6.33	3.81	5.29	0.13	22.96	4.96
	CO 8 hr	0	.	.	.	.	.	.
	SO2 1 HR	364	1.66	1.94	1	0	12	2
	SO2 24 HR	364	0.57	0.58	0.38	0	2.71	1
	Mean temperature	365	19.21	3.89	19.93	8.68	26.84	5.8
13	PM10 24 hr	364	13.81	7.08	12.24	2.69	51.51	8.37
	PM2.5 24 hr	344	5.58	2.81	4.8	1.75	19.8	3.48
	O3 1 hr	364	34.87	8.4	33	13	62	11
	O3 4 hr	365	33.06	7.75	31.75	9	58.5	9.75
	O3 8 hr	365	30.99	7.1	29.88	9	54.38	9.38
	NO21hr	352	13.35	9.81	10	1	43	14
	NO224hr	352	5.36	3.76	4.12	0.35	19.78	4.26
	CO 8 hr	212	0.28	0.43	0.1	0.01	2.24	0.25
	SO2 1 HR	0	.	.	.	.	.	.
	SO2 24 HR	0	.	.	.	.	.	.
	Mean temperature	364	18.5	4.94	19.49	5.39	28.46	6.83
14	PM10 24 hr	363	17.74	7.2	16.21	6.18	56.67	8.71
	PM2.5 24 hr	365	7.62	2.4	7.29	2.83	21.18	2.87
	O3 1 hr	365	30.58	8.08	30	14	67	7
	O3 4 hr	366	28.61	7.02	28	13.25	59	7.25
	O3 8 hr	366	25.9	6.28	25.19	12.13	53.38	7.63
	NO21hr	365	19.58	8.14	20	2	57	11
	NO224hr	365	7.53	3.71	7.13	0.9	19.13	5.17
	CO 8 hr	366	0.36	0.34	0.23	0.01	1.68	0.35

Site	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
	SO2 1 HR	365	4.49	6.89	1	0	40	5
	SO2 24 HR	365	0.64	0.86	0.33	0	5.58	0.92
	Mean temperature	365	17.77	4.3	16.87	10.49	32.09	5.18
15	PM10 24 hr	0	.	.	.	.	.	.
	PM2.5 24 hr	365	7.49	2.73	6.89	2.49	19.93	3.31
	O3 1 hr	365	34.58	8.81	33.7	16	80.8	8.6
	O3 4 hr	366	32.85	7.84	32.48	15.17	74.7	8.25
	O3 8 hr	366	31.24	6.86	31.41	13.59	61.19	8.45
	NO21hr	365	12.14	8.36	10.8	0.2	35.3	12.9
	NO224hr	365	3.34	2.61	2.79	0.02	12.54	3.4
	CO 8 hr	0	.	.	.	.	.	.
	SO2 1 HR	0	.	.	.	.	.	.
	SO2 24 HR	0	.	.	.	.	.	.
	Mean temperature	347	18.59	3.51	18.15	12.03	31.91	3.99
16	PM10 24 hr	365	15.44	5.53	14.49	4.81	40.3	7.1
	PM2.5 24 hr	365	7.34	2.35	6.9	3.49	21.63	2.72
	O3 1 hr	0	.	.	.	.	.	.
	O3 4 hr	0	.	.	.	.	.	.
	O3 8 hr	0	.	.	.	.	.	.
	NO21hr	365	18.48	8.17	19	1	53	11
	NO224hr	365	6.94	3.97	6.54	0.06	17.83	5.71
	CO 8 hr	364	0.4	0.36	0.26	0.01	2	0.4
	SO2 1 HR	0	.	.	.	.	.	.
	SO2 24 HR	0	.	.	.	.	.	.
	Mean temperature	357	18.14	4.03	17.22	11.37	32.16	4.56
17	PM10 24 hr	356	20.41	12.83	17.8	1.23	124.82	10.4
	PM2.5 24 hr	366	7.98	2.55	7.73	2.83	21.63	3.19
	O3 1 hr	366	30.04	8.06	29	16	77	8
	O3 4 hr	366	28.59	7.47	27.5	14.75	69.75	7.75
	O3 8 hr	366	26.81	7.15	26	13.5	62	7.71
	NO21hr	366	20.24	9.54	23	0	40	16
	NO224hr	366	8.6	4.97	8.26	0	21.7	7.87
	CO 8 hr	0	.	.	.	.	.	.
	SO2 1 HR	0	.	.	.	.	.	.

Site	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
	SO2 24 HR	0	.	.	.	.	.	.
	Mean temperature	360	17.87	5.51	17.45	7.13	35.36	7.63
18	PM10 24 hr	361	15.5	7.71	13.42	2.73	49.87	8.98
	PM2.5 24 hr	0	.	.	.	.	.	.
	O3 1 hr	362	31.96	9.29	30	16	76	7
	O3 4 hr	363	30.57	8.35	28.75	14.25	63.25	7.75
	O3 8 hr	366	28.82	7.87	27.63	12.38	65.88	7.88
	NO21hr	358	13.72	7.48	14	1	35	12
	NO224hr	357	3.77	2.25	3.43	0	11.57	3.22
	CO 8 hr	0	.	.	.	.	.	.
	SO2 1 HR	0	.	.	.	.	.	.
	SO2 24 HR	0	.	.	.	.	.	.
	Mean temperature	361	17.13	5.88	16.12	7.37	35.46	8.59
19	PM10 24 hr	366	16.04	8.64	13.5	4.22	73.99	9.1
	PM2.5 24 hr	0	.	.	.	.	.	.
	O3 1 hr	366	30.92	8.74	29	11	78	7
	O3 4 hr	366	30.24	8.35	28.75	11	74.25	7.5
	O3 8 hr	366	28.82	7.87	27.63	12.38	65.88	7.88
	NO21hr	357	11.72	6.74	11	0	39	11
	NO224hr	357	3.77	2.25	3.43	0	11.57	3.22
	CO 8 hr	292	0.08	0.09	0.05	0.01	0.64	0.07
	SO2 1 HR	0	.	.	.	.	.	.
	SO2 24 HR	0	.	.	.	.	.	.
	Mean temperature	366	17.59	6.3	16.96	6.6	36.25	9.24
2	PM10 24 hr	365	19.41	10.18	16.87	4.77	96.57	11.45
	PM2.5 24 hr	365	5.95	7.77	4.48	0.92	131.87	3.5
	O3 1 hr	365	31.87	12.08	29	6.12	127	10.18
	O3 4 hr	366	29.66	10.95	27.6	5.1	112.5	9.27
	O3 8 hr	366	26.98	9.75	25.33	5.71	90.63	8.93
	NO21hr	365	24.53	9.25	25	4	56	12.5
	NO224hr	365	12.38	5.41	11.51	2.65	30.84	6.85
	CO 8 hr	366	0.39	0.28	0.3	0.07	2.17	0.29
	SO2 1 HR	357	4.82	4.96	3.58	0	47.03	4.02
	SO2 24 HR	357	1.15	1	0.98	0	4.91	1.41

Site	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
	Mean temperature	364	16	5.07	15.85	5.96	31.06	6.82
20	PM10 24 hr	366	21.44	14.55	17.01	5.11	166.7	13.02
	PM2.5 24 hr	0	.	.	.	.	.	.
	O3 1 hr	0	.	.	.	.	.	.
	O3 4 hr	0	.	.	.	.	.	.
	O3 8 hr	0	.	.	.	.	.	.
	NO21hr	0	.	.	.	.	.	.
	NO224hr	0	.	.	.	.	.	.
	CO 8 hr	0	.	.	.	.	.	.
	SO2 1 HR	366	64.35	90.56	29	0	594	99
	SO2 24 HR	366	8.74	11.06	3.77	0	59.74	12.65
	Mean temperature	366	18.48	6.2	18.14	6.72	33.3	9.55
21	PM10 24 hr	256	19.55	8.35	18.48	5.31	78.89	8.45
	PM2.5 24 hr	0	.	.	.	.	.	.
	O3 1 hr	237	25.93	7.09	26	5	46	10
	O3 4 hr	237	24.33	6.85	24.33	5	42	9
	O3 8 hr	237	22.53	6.53	22	3.75	38.75	8.7
	NO21hr	254	16.46	7.47	17	1	33	12
	NO224hr	254	7.99	4.8	7.13	0.47	19.42	7.96
	CO 8 hr	272	0.55	0.33	0.45	0.1	1.94	0.35
	SO2 1 HR	254	6.62	6.06	5	0	33	8
	SO2 24 HR	254	1.84	1.61	1.43	0	8.83	2.01
	Mean temperature	263	16.33	4.1	15.7	8.2	24.8	7.2
22	PM10 24 hr	257	14.33	6.09	12.96	5.27	56.48	6.21
	PM2.5 24 hr	269	8.96	3.57	8.37	3.44	26.45	4.34
	O3 1 hr	264	25.83	8.69	26	0	53	9
	O3 4 hr	265	24.13	7.95	24.25	0.33	48	8.5
	O3 8 hr	265	21.87	6.94	22.13	1.29	41.75	8.17
	NO21hr	251	15.85	6.69	16	2	31	10
	NO224hr	251	7.69	3.39	7.57	0.95	16	5.43
	CO 8 hr	0	.	.	.	.	.	.
	SO2 1 HR	267	7.63	6.85	6	0	37	9
	SO2 24 HR	267	2.05	1.74	1.5	0	12.14	2.01
	Mean temperature	273	15.53	4.36	14.8	7	25.2	7.5

Site	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
23	PM10 24 hr	270	18.01	8.07	16.76	3.64	59.89	8.79
	PM2.5 24 hr	260	8.89	3.22	8.56	3.03	22.03	4.5
	O3 1 hr	264	25.44	8.21	25	0	54	10
	O3 4 hr	265	23.72	7.74	23.75	0.33	49	10
	O3 8 hr	265	21.22	7.11	20.63	0.43	42	9.75
	NO21hr	225	18.15	5.63	18	5	31	8
	NO224hr	225	9.07	3.54	8.91	2.39	19	5.43
	CO 8 hr	0	.	.	.	.	.	.
	SO2 1 HR	251	8.04	7.28	7	0	51	8
	SO2 24 HR	251	2.23	1.74	1.9	0	10.05	2.13
	Mean temperature	271	16.08	4.37	15.6	8.6	26	7.4
25	PM10 24 hr	263	16.59	7.49	15.18	4.78	78.33	8.05
	PM2.5 24 hr	263	5.4	3.03	4.59	0.9	15.72	4.47
	O3 1 hr	273	28.7	7.37	29	3	58	8
	O3 4 hr	273	26.92	6.82	26.75	4.25	54.25	7.75
	O3 8 hr	273	24.57	6.34	24.25	5.57	47.13	8.03
	NO21hr	251	19.71	8.09	20	0	41	12
	NO224hr	251	9.03	4.14	8.39	0	20.09	6.59
	CO 8 hr	266	0.41	0.22	0.36	0.03	1.2	0.31
	SO2 1 HR	206	4.05	4.06	3	0	21	5
	SO2 24 HR	206	1.39	1.36	1	0	8.5	1.63
	Mean temperature	274	16.18	3.77	15.6	8.4	23.7	6.4
26	PM10 24 hr	274	18.37	7.04	16.79	6.44	40.52	9.48
	PM2.5 24 hr	274	8.8	3.37	8.03	3.75	21.78	4.11
	O3 1 hr	251	26.57	7.1	26	0	63	8
	O3 4 hr	251	24.68	6.76	25	0.5	56	8.33
	O3 8 hr	251	21.65	6.41	21.83	5.13	44.88	8.13
	NO21hr	256	21.05	6.81	22	1	39	10
	NO224hr	256	11.52	5.06	11.22	1	27.29	8.01
	CO 8 hr	0	.	.	.	.	.	.
	SO2 1 HR	0	.	.	.	.	.	.
	SO2 24 HR	0	.	.	.	.	.	.
	Mean temperature	274	16.05	4.13	15.5	8.8	25	7.4
27	PM10 24 hr	274	16.73	6.63	16.15	5.19	40.21	9.45

Site	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
	PM2.5 24 hr	274	9.53	3.41	8.95	3.85	20.67	4.98
	O3 1 hr	266	28.58	12.35	27	0	98	10
	O3 4 hr	267	26.19	11.28	25	0.25	89	10.25
	O3 8 hr	267	22.48	9.1	22	0.88	56.25	10.5
	NO21hr	266	21.59	6.95	21.5	4	42	11
	NO224hr	266	11.69	4.16	11.71	3	21.96	6.24
	CO 8 hr	265	0.66	0.48	0.5	0.1	2.34	0.58
	SO2 1 HR	0	.	.	.	.	.	.
	SO2 24 HR	0	.	.	.	.	.	.
	Mean temperature	271	15.33	4.93	14.5	6.5	26.2	8.8
28	PM10 24 hr	274	16.8	5.78	15.9	7.02	43.15	7.12
	PM2.5 24 hr	0	.	.	.	.	.	.
	O3 1 hr	269	24.95	6.64	25	7	50	8
	O3 4 hr	269	22.97	6.32	23	6.75	43.75	8.25
	O3 8 hr	270	20.06	6.24	19.75	4	36.38	8.38
	NO21hr	226	21.81	7.83	23	5	40	13
	NO224hr	226	12.1	5.46	11.18	3.22	25.83	8.96
	CO 8 hr	272	0.48	0.33	0.36	0.07	1.53	0.48
	SO2 1 HR	0	.	.	.	.	.	.
	SO2 24 HR	0	.	.	.	.	.	.
	Mean temperature	273	16.43	4.12	15.6	8.8	25.1	7.2
3	PM10 24 hr	365	18.72	8.57	16.66	5.95	81.71	9.13
	PM2.5 24 hr	365	6.6	5.09	5.18	1.14	58.44	4.18
	O3 1 hr	362	31.85	12.83	29	7	121	11
	O3 4 hr	364	29.82	11.81	27.5	6	115	10.31
	O3 8 hr	364	26.96	10.85	24.8	5	99	10.28
	NO21hr	365	23.47	8.45	24	2	51.85	12
	NO224hr	365	11.55	5	11.17	0.81	25.52	6.65
	CO 8 hr	365	0.64	0.43	0.5	0.05	2.73	0.43
	SO2 1 HR	365	2.52	2.26	2	0	22.31	2.57
	SO2 24 HR	365	0.83	0.75	0.69	0	3.95	0.95
	Mean temperature	365	16.75	5.29	16.42	6.46	31.55	7.1
4	PM10 24 hr	347	17.18	8.31	15.36	5.94	77.38	8.79
	PM2.5 24 hr	0	.	.	.	.	.	.

Site	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
	O3 1 hr	0	.	.	.	.	.	.
	O3 4 hr	0	.	.	.	.	.	.
	O3 8 hr	0	.	.	.	.	.	.
	NO21hr	356	25.07	8.69	25.61	5	52	13
	NO224hr	0	.	.	.	.	.	.
	CO 8 hr	358	0.42	0.44	0.3	0.01	2.9	0.35
	SO2 1 HR	0	.	.	.	.	.	.
	SO2 24 HR	0	.	.	.	.	.	.
	Mean temperature	363	16.38	5.31	15.98	6.37	31.78	7.24
5	PM10 24 hr	345	15.79	8.6	13.68	4.92	87.23	8.09
	PM2.5 24 hr	0	.	.	.	.	.	.
	O3 1 hr	348	32.85	12.1	30	5.05	117	11.11
	O3 4 hr	351	30.97	11.47	28.75	4.52	110.75	11.45
	O3 8 hr	351	28.31	10.57	26.35	5.89	95.5	10.23
	NO21hr	339	22.02	7.29	22	4	47.12	11.53
	NO224hr	339	10.78	4.29	10.39	1.83	24.16	6.58
	CO 8 hr	351	0.47	0.33	0.36	0.1	1.8	0.31
	SO2 1 HR	348	1.7	1.45	1	0	8.44	1.01
	SO2 24 HR	348	0.45	0.51	0.31	0	4.62	0.51
	Mean temperature	365	16.57	4.99	16.37	6.19	31.85	6.72
6	PM10 24 hr	355	17.57	11.13	15.84	3.6	151.47	9.58
	PM2.5 24 hr	0	.	.	.	.	.	.
	O3 1 hr	364	29.38	10.47	27	8	94	8
	O3 4 hr	366	27.37	9.44	26	6.75	82.25	7.25
	O3 8 hr	366	24.9	8.21	23.88	5.25	68.75	7.25
	NO21hr	364	14.83	6.66	15	1	37	10
	NO224hr	364	6.52	3.28	6.37	0.04	18.29	5.29
	CO 8 hr	0	.	.	.	.	.	.
	SO2 1 HR	356	8.45	9.22	6	0	92	8
	SO2 24 HR	356	2.53	1.92	2.09	0	12.8	2.22
	Mean temperature	362	14.89	5.01	14.83	5.13	26.92	7.41

7	PM10 24 hr	365	21.03	12.57	18.51	5.62	141.08	13.85
	PM2.5 24 hr	0	.	.	.	.	.	.
	O3 1 hr	365	34.07	12	31	7.48	83.51	10.59
	O3 4 hr	366	32.18	11.37	30	5.59	76.8	10.5
	O3 8 hr	366	29.41	10.37	28	4.14	69.24	9.81
	NO21hr	362	17.66	7.15	18	2	42.96	10.36
	NO224hr	362	7.43	3.73	7.09	0.65	19.26	5.21
	CO 8 hr	341	0.44	0.49	0.24	0.01	2.8	0.44
	SO2 1 HR	0	.	.	.	.	.	.
	SO2 24 HR	0	.	.	.	.	.	.
	Mean temperature	365	15.25	5.34	14.96	4.27	28.66	7.34
8	PM10 24 hr	345	15.79	8.6	13.68	4.92	87.23	8.09
	PM2.5 24 hr	0	.	.	.	.	.	.
	O3 1 hr	348	32.85	12.1	30	5.05	117	11.11
	O3 4 hr	351	30.97	11.47	28.75	4.52	110.75	11.45
	O3 8 hr	351	28.31	10.57	26.35	5.89	95.5	10.23
	NO21hr	339	22.02	7.29	22	4	47.12	11.53
	NO224hr	339	10.78	4.29	10.39	1.83	24.16	6.58
	CO 8 hr	351	0.47	0.33	0.36	0.1	1.8	0.31
	SO2 1 HR	348	1.7	1.45	1	0	8.44	1.01
	SO2 24 HR	348	0.45	0.51	0.31	0	4.62	0.51
	Mean temperature	345	15.82	5.35	15.67	5.63	30.97	6.72
9	PM10 24 hr	365	20.83	13.2	18.52	3.38	130.85	12.6
	PM2.5 24 hr	0	.	.	.	.	.	.
	O3 1 hr	365	32.08	10.4	30	10	88	9.09
	O3 4 hr	366	30.56	9.55	29.01	9	76.33	9.58
	O3 8 hr	366	28.71	8.89	27.5	5.38	65.83	9.57
	NO21hr	365	15.46	7.83	15.89	1	36.55	12.95
	NO224hr	365	6.16	3.92	5.39	0.41	18.13	5.61
	CO 8 hr	327	0.31	0.24	0.25	0.01	1.66	0.21
	SO2 1 HR	364	5.67	8.02	3	0	82.74	7
	SO2 24 HR	364	0.97	1.06	0.63	0	8.5	1.35
	Mean temperature	362	15.59	4.58	15.49	6.06	30.35	6.13

Table 1.2. Summary statistics for air pollutants by State/Territory and season, ACHAPS Panel Study

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
ACT	Autumn	PM10 24 hr	92	18.33	14.69	15.81	4.62	119.21	11.93
		PM2.5 24 hr	67	9.74	8.39	6.99	0.12	42.45	11.23
		O3 1 hr	92	32.87	8.96	31.38	7.61	56.13	11.50
		O3 4 hr	92	31.52	8.64	29.85	7.26	52.22	10.30
		O3 8 hr	92	27.97	8.32	26.70	3.53	51.18	9.98
		NO2 1 hr	92	17.94	7.68	18.31	2.13	37.77	8.99
		NO2 24 hr	92	6.78	2.92	6.88	0.97	14.80	4.25
		CO 8 hr	92	0.78	0.66	0.54	0.10	2.70	0.75
		SO2 1 hr	0	.	.	.	.	.	.
		SO2 24 hr	0	.	.	.	.	.	.
		Mean daily temperature	35	18.10	3.34	18.12	11.78	25.57	4.73
	Spring	PM10 24 hr	91	14.08	6.62	13.49	2.91	32.45	9.10
		PM2.5 24 hr	72	5.68	3.36	5.36	0.86	15.33	3.78
		O3 1 hr	91	38.80	9.78	36.93	22.65	69.77	12.24

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
		O3 4 hr	91	37.31	9.33	34.92	20.83	68.07	11.65
		O3 8 hr	91	34.92	8.57	33.22	19.23	61.60	10.71
		NO2 1 hr	91	18.02	8.96	18.72	0.99	39.08	11.85
		NO2 24 hr	91	6.42	3.53	6.03	0.60	14.73	5.05
		CO 8 hr	91	0.42	0.29	0.33	0.06	1.30	0.41
		SO2 1 hr	0	.	.	.	.	.	.
		SO2 24 hr	0	.	.	.	.	.	.
		Mean daily temperature	0	.	.	.	.	.	.
	Summer	PM10 24 hr	89	16.29	8.77	14.18	4.82	66.20	8.36
		PM2.5 24 hr	52	6.30	6.45	4.94	1.25	45.69	2.95
		O3 1 hr	90	42.73	13.01	42.88	19.17	75.42	19.91
		O3 4 hr	91	40.42	12.07	40.67	17.80	72.03	20.67
		O3 8 hr	91	37.46	10.54	36.38	17.55	60.79	17.99
		NO2 1 hr	86	14.69	8.68	14.16	0.99	38.96	13.45
		NO2 24 hr	86	5.25	2.69	5.34	0.78	12.24	4.02

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
		CO 8 hr	91	0.30	0.15	0.27	0.09	1.26	0.16
		SO2 1 hr	0	.	.	.	.	.	.
		SO2 24 hr	0	.	.	.	.	.	.
		Mean daily temperature	59	21.69	2.61	21.64	16.78	28.41	3.27
	Winter	PM10 24 hr	92	12.54	8.47	10.98	2.91	56.55	10.65
		PM2.5 24 hr	21	9.33	8.13	6.52	1.52	27.77	10.17
		O3 1 hr	92	28.84	4.83	29.72	8.24	40.01	4.33
		O3 4 hr	92	27.54	5.33	28.46	5.83	39.24	5.86
		O3 8 hr	92	24.93	6.46	26.47	3.96	38.34	9.29
		NO2 1 hr	89	19.34	7.53	20.62	2.00	31.23	9.23
		NO2 24 hr	89	7.79	4.32	6.83	0.65	15.55	8.20
		CO 8 hr	83	0.99	0.75	0.87	0.09	2.63	1.30
		SO2 1 hr	0	.	.	.	.	.	.
		SO2 24 hr	0	.	.	.	.	.	.
		Mean daily	0	.	.	.	.	.	.

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
		temperature							
NSW	Autumn	PM10 24 hr	615	17.36	5.98	16.63	5.64	45.55	7.74
		PM2.5 24 hr	455	8.66	3.73	8.18	1.27	21.78	4.87
		O3 1 hr	604	26.43	8.21	26.00	0.00	71.00	8.00
		O3 4 hr	605	24.32	7.63	24.25	0.25	59.00	7.42
		O3 8 hr	606	21.23	6.54	21.25	0.88	47.13	7.61
		NO2 1 hr	579	19.43	6.93	19.00	3.00	42.00	11.00
		NO2 24 hr	579	10.26	4.48	10.00	1.00	25.83	5.91
		CO 8 hr	363	0.58	0.36	0.45	0.03	2.26	0.49
		SO2 1 hr	344	6.56	6.22	5.00	0.00	33.00	7.00
		SO2 24 hr	344	1.84	1.56	1.43	0.00	10.05	2.00
		Mean daily temperature	644	16.68	3.09	16.40	9.90	23.90	4.80
	Spring	PM10 24 hr	210	21.79	9.52	19.66	3.64	78.89	11.34
		PM2.5 24 hr	150	9.35	4.10	8.96	1.60	26.45	4.56

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
		O3 1 hr	208	33.41	5.40	33.00	0.00	52.00	6.00
		O3 4 hr	208	31.83	5.05	31.75	0.50	47.25	6.25
		O3 8 hr	208	29.60	4.79	29.88	6.88	42.00	6.08
		NO2 1 hr	196	21.76	7.43	22.00	1.00	40.00	9.00
		NO2 24 hr	196	10.19	4.67	10.03	0.73	24.00	6.09
		CO 8 hr	120	0.42	0.21	0.40	0.09	1.11	0.31
		SO2 1 hr	109	7.44	7.64	6.00	0.00	51.00	8.00
		SO2 24 hr	109	2.25	1.90	1.95	0.00	8.83	2.03
		Mean daily temperature	209	15.64	3.44	14.70	9.60	24.60	5.30
	Summer	PM10 24 hr	418	18.12	6.61	16.81	6.54	45.58	9.40
		PM2.5 24 hr	287	7.99	2.73	7.55	2.12	22.03	3.13
		O3 1 hr	404	24.94	11.76	22.00	0.00	98.00	11.00
		O3 4 hr	406	23.04	10.15	20.75	0.33	89.00	8.50
		O3 8 hr	406	21.05	7.90	19.60	1.29	56.25	7.13
		NO2 1 hr	352	12.25	4.64	12.00	1.00	31.00	6.00

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
		NO2 24 hr	352	6.03	2.57	5.83	1.00	16.45	3.34
		CO 8 hr	231	0.32	0.13	0.30	0.10	0.66	0.23
		SO2 1 hr	208	5.64	6.04	3.00	0.00	31.00	7.00
		SO2 24 hr	208	1.42	1.32	1.05	0.00	6.22	1.64
		Mean daily temperature	407	21.29	1.92	21.40	15.60	26.20	2.60
	Winter	PM10 24 hr	625	14.89	7.07	13.49	4.78	78.33	7.78
		PM2.5 24 hr	448	7.87	3.79	7.45	0.90	20.60	5.03
		O3 1 hr	608	25.50	5.55	27.00	0.00	36.00	6.00
		O3 4 hr	608	23.80	5.87	25.00	0.33	34.75	7.50
		O3 8 hr	608	20.98	6.26	22.38	0.43	33.25	9.20
		NO2 1 hr	602	22.30	6.57	23.00	0.00	41.00	8.00
		NO2 24 hr	602	11.63	4.72	11.74	0.00	27.29	6.61
		CO 8 hr	361	0.64	0.44	0.53	0.03	2.34	0.53
		SO2 1 hr	317	7.34	6.41	5.00	0.00	36.00	9.00
		SO2 24 hr	317	2.16	1.79	1.78	0.00	12.14	2.05

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
		Mean daily temperature	639	12.03	2.12	11.80	6.50	17.70	3.30
QLD	Autumn	PM10 24 hr	404	16.48	5.99	15.73	4.70	41.31	8.14
		PM2.5 24 hr	276	5.30	2.39	4.85	1.37	19.80	2.95
		O3 1 hr	274	29.43	10.32	29.00	6.00	70.00	14.00
		O3 4 hr	274	27.41	9.67	27.50	5.25	67.00	14.25
		O3 8 hr	274	24.93	8.61	25.14	7.75	67.00	12.13
		NO2 1 hr	366	17.49	8.65	16.00	2.00	42.00	13.00
		NO2 24 hr	276	6.42	3.99	5.34	0.48	19.78	4.46
		CO 8 hr	145	0.36	0.29	0.36	0.01	1.28	0.38
		SO2 1 hr	92	2.12	1.62	1.00	1.00	8.00	2.00
		SO2 24 hr	92	1.16	0.31	1.00	0.96	2.71	0.21
		Mean daily temperature	404	21.74	2.66	21.65	14.99	28.78	3.60
	Spring	PM10 24 hr	363	18.60	8.76	17.26	4.41	51.51	10.45
		PM2.5 24 hr	272	6.04	3.03	5.45	0.20	13.98	4.35

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
		O3 1 hr	273	34.73	11.33	34.00	14.00	72.00	17.00
		O3 4 hr	273	32.85	10.48	32.50	12.75	60.25	16.75
		O3 8 hr	273	30.34	9.43	30.38	11.75	54.38	14.75
		NO2 1 hr	355	20.14	9.70	19.00	2.00	61.00	13.00
		NO2 24 hr	265	6.99	3.07	6.58	1.00	17.13	4.13
		CO 8 hr	149	0.31	0.22	0.29	0.01	1.30	0.27
		SO2 1 hr	91	1.59	2.17	0.00	0.00	9.00	3.00
		SO2 24 hr	91	0.35	0.50	0.00	0.00	1.91	0.58
		Mean daily temperature	363	20.13	2.87	20.31	11.12	26.85	4.05
	Summer	PM10 24 hr	419	16.89	6.28	16.32	4.55	43.93	7.10
		PM2.5 24 hr	250	5.55	2.05	5.12	1.75	14.06	2.15
		O3 1 hr	256	26.97	11.83	26.00	9.00	76.00	18.00
		O3 4 hr	260	24.57	10.46	22.88	8.00	62.33	15.88
		O3 8 hr	260	22.36	9.12	21.69	7.71	51.88	14.13
		NO2 1 hr	356	10.70	5.44	10.00	1.00	28.00	7.50

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
		NO2 24 hr	266	3.59	1.86	3.35	0.13	10.04	2.66
		CO 8 hr	128	0.21	0.16	0.20	0.01	0.78	0.17
		SO2 1 hr	90	0.51	0.89	0.00	0.00	4.00	1.00
		SO2 24 hr	90	0.08	0.17	0.00	0.00	0.75	0.08
		Mean daily temperature	419	23.84	2.13	23.90	17.00	29.68	2.91
	Winter	PM10 24 hr	367	16.45	8.65	14.63	2.68	53.41	9.96
		PM2.5 24 hr	275	6.21	3.71	5.23	1.67	23.59	4.27
		O3 1 hr	274	27.83	6.30	28.50	10.00	51.00	9.00
		O3 4 hr	274	26.70	6.25	27.75	9.50	46.33	9.25
		O3 8 hr	275	24.61	5.76	25.63	7.63	39.43	8.88
		NO2 1 hr	367	25.35	11.06	26.00	3.00	69.00	14.00
		NO2 24 hr	275	9.48	4.85	9.30	1.09	22.96	7.26
		CO 8 hr	155	0.80	0.56	0.74	0.01	2.73	0.84
		SO2 1 hr	91	2.42	2.24	2.00	0.00	12.00	2.00
		SO2 24 hr	91	0.68	0.58	0.50	0.00	2.21	1.00

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
		Mean daily temperature	367	14.33	2.83	14.56	5.39	21.18	3.75
SA	Autumn	PM10 24 hr	368	18.04	9.29	15.39	5.41	62.17	10.86
		PM2.5 24 hr	92	7.55	2.49	7.40	3.84	20.84	2.84
		O3 1 hr	276	27.72	5.89	27.00	17.00	60.00	6.00
		O3 4 hr	276	26.79	5.56	26.00	14.75	56.00	6.00
		O3 8 hr	276	25.36	5.36	24.56	13.50	47.25	5.88
		NO2 1 hr	272	15.51	8.57	15.00	0.00	40.00	12.00
		NO2 24 hr	268	5.43	4.22	4.20	0.00	21.70	4.26
		CO 8 hr	74	0.06	0.05	0.05	0.01	0.25	0.06
		SO2 1 hr	92	65.28	91.53	32.00	0.00	594.00	100.50
		SO2 24 hr	92	9.08	11.33	4.40	0.00	43.38	14.18
		Mean daily temperature	368	18.63	4.01	17.85	10.16	32.30	4.84
	Spring	PM10 24 hr	364	19.07	12.80	16.13	5.54	166.70	10.51
		PM2.5 24 hr	91	8.26	2.49	8.16	3.69	13.77	3.37

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
		O3 1 hr	270	34.15	7.27	32.00	20.00	63.00	7.00
		O3 4 hr	270	33.14	6.64	31.25	20.00	60.75	6.50
		O3 8 hr	273	31.81	5.93	30.13	22.00	54.50	5.63
		NO2 1 hr	266	13.86	8.54	12.00	2.00	40.00	13.00
		NO2 24 hr	273	4.75	3.62	3.63	0.25	18.48	3.13
		CO 8 hr	61	0.05	0.03	0.04	0.01	0.14	0.05
		SO2 1 hr	91	72.19	92.03	31.00	2.00	365.00	112.00
		SO2 24 hr	91	9.79	10.89	4.67	2.00	59.74	14.46
		Mean daily temperature	364	17.81	4.64	16.59	10.22	30.97	7.31
	Summer	PM10 24 hr	349	22.99	13.44	20.73	1.23	124.82	12.99
		PM2.5 24 hr	91	8.17	2.81	7.76	3.21	21.63	3.58
		O3 1 hr	272	34.25	12.99	32.50	11.00	78.00	18.00
		O3 4 hr	273	32.53	11.88	31.00	11.00	74.25	16.75
		O3 8 hr	273	30.74	10.92	29.38	12.38	65.88	14.50
		NO2 1 hr	267	11.73	8.88	9.00	0.00	39.00	13.00

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
		NO2 24 hr	263	4.03	3.10	3.04	0.00	14.00	3.96
		CO 8 hr	65	0.04	0.04	0.03	0.01	0.30	0.02
		SO2 1 hr	91	56.46	92.74	12.00	0.00	452.00	73.00
		SO2 24 hr	91	6.86	10.59	2.00	0.00	52.61	9.08
		Mean daily temperature	353	23.64	4.70	23.35	13.37	36.25	7.49
	Winter	PM10 24 hr	368	13.52	8.09	11.79	4.81	85.86	5.66
		PM2.5 24 hr	92	7.94	2.36	7.72	2.83	16.45	2.87
		O3 1 hr	276	27.87	3.14	28.00	16.00	34.00	4.00
		O3 4 hr	276	26.83	3.39	27.00	14.25	33.00	4.75
		O3 8 hr	276	24.74	3.87	25.13	13.88	32.63	5.47
		NO2 1 hr	276	19.79	7.15	21.00	3.00	38.00	10.00
		NO2 24 hr	276	7.34	4.58	6.52	0.56	19.88	5.50
		CO 8 hr	92	0.16	0.12	0.12	0.02	0.64	0.17
		SO2 1 hr	92	63.47	86.64	36.50	0.00	560.00	83.50
		SO2 24 hr	92	9.22	11.35	4.83	0.00	57.37	15.34

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
		Mean daily temperature	368	11.23	2.59	10.97	6.60	20.88	2.95
VIC	Autumn	PM10 24 hr	702	19.43	10.62	17.16	4.77	130.85	12.35
		PM2.5 24 hr	184	5.85	3.96	5.04	0.92	21.86	3.89
		O3 1 hr	643	29.30	8.77	27.06	9.00	68.32	9.43
		O3 4 hr	644	27.51	8.31	25.94	7.50	62.90	8.69
		O3 8 hr	644	24.81	7.33	23.63	5.88	55.91	7.02
		NO2 1 hr	735	22.08	8.17	21.55	1.95	51.85	11.49
		NO2 24 hr	643	10.13	4.74	9.62	0.86	30.84	6.12
		CO 8 hr	627	0.46	0.38	0.37	0.01	2.63	0.42
		SO2 1 hr	543	4.22	5.17	2.65	0.00	44.00	4.04
		SO2 24 hr	543	1.20	1.32	0.80	0.00	9.91	1.38
		Mean daily temperature	728	16.84	3.00	16.52	9.54	28.54	3.09
	Spring	PM10 24 hr	728	17.51	8.45	15.77	3.38	97.43	9.12
		PM2.5 24 hr	182	5.49	3.08	4.62	1.54	18.43	3.04

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
		O3 1 hr	637	33.77	9.06	32.00	17.00	82.00	7.00
		O3 4 hr	637	32.29	8.29	30.67	13.25	73.75	7.75
		O3 8 hr	637	30.05	7.47	28.88	10.38	70.38	7.00
		NO2 1 hr	711	19.44	8.85	19.00	1.00	56.00	12.00
		NO2 24 hr	629	8.25	4.30	7.74	0.04	25.22	6.18
		CO 8 hr	630	0.34	0.21	0.30	0.01	1.44	0.21
		SO2 1 hr	546	3.82	6.79	2.00	0.00	88.00	3.00
		SO2 24 hr	546	0.83	1.13	0.43	0.00	9.70	0.98
		Mean daily temperature	728	15.30	3.69	14.71	7.73	28.61	4.08
	Summer	PM10 24 hr	686	22.86	13.65	19.94	5.62	151.47	11.79
		PM2.5 24 hr	180	8.89	11.54	6.14	0.95	131.87	6.02
		O3 1 hr	593	39.53	16.97	37.00	14.00	127.00	25.00
		O3 4 hr	605	36.57	15.58	34.75	9.00	115.00	22.50
		O3 8 hr	605	33.99	13.41	32.38	9.00	99.00	20.25
		NO2 1 hr	673	15.98	8.42	15.00	1.00	52.00	11.00

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
		NO2 24 hr	583	6.73	3.87	6.24	0.41	22.59	5.05
		CO 8 hr	569	0.30	0.23	0.25	0.01	2.69	0.23
		SO2 1 hr	505	4.61	7.44	2.00	0.00	92.00	4.06
		SO2 24 hr	505	1.03	1.11	0.74	0.00	8.50	1.21
		Mean daily temperature	701	21.40	3.93	20.73	13.23	31.85	5.70
	Winter	PM10 24 hr	736	13.89	5.95	12.68	3.60	60.85	6.40
		PM2.5 24 hr	184	4.89	2.69	4.06	1.14	14.08	2.98
		O3 1 hr	644	26.51	5.36	27.00	5.05	48.00	6.00
		O3 4 hr	644	24.89	5.53	25.75	4.52	38.33	6.67
		O3 8 hr	644	22.16	5.85	22.88	4.14	37.71	7.56
		NO2 1 hr	736	24.47	7.24	25.00	2.00	51.00	9.00
		NO2 24 hr	644	11.99	5.11	11.48	0.65	27.52	7.22
		CO 8 hr	633	0.69	0.50	0.53	0.03	2.90	0.65
		SO2 1 hr	544	4.03	4.43	3.00	0.00	30.00	4.00
		SO2 24 hr	544	1.21	1.48	0.81	0.00	12.80	1.39

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
		Mean daily temperature	734	10.34	2.53	9.99	4.27	17.33	3.37
WA	Autumn	PM10 24 hr	184	16.51	5.02	16.10	6.33	32.87	6.52
		PM2.5 24 hr	276	7.44	2.30	6.96	3.49	17.66	2.61
		O3 1 hr	184	31.98	9.34	30.00	15.00	80.80	7.60
		O3 4 hr	184	29.97	7.70	28.75	14.25	74.70	6.95
		O3 8 hr	184	27.48	6.62	26.29	12.50	61.19	7.19
		NO2 1 hr	276	19.09	8.82	19.00	0.60	53.00	11.00
		NO2 24 hr	276	7.01	4.12	6.62	0.05	19.13	5.65
		CO 8 hr	184	0.46	0.36	0.36	0.01	1.78	0.43
		SO2 1 hr	92	4.91	7.37	2.00	0.00	40.00	4.50
		SO2 24 hr	92	0.63	0.78	0.42	0.00	4.21	0.65
		Mean daily temperature	276	18.94	3.94	18.74	11.18	32.16	4.27
	Spring	PM10 24 hr	182	16.58	6.51	14.99	7.08	37.78	9.26
		PM2.5 24 hr	273	7.81	2.81	7.15	3.26	19.93	3.35

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
		O3 1 hr	182	35.83	7.80	34.00	23.00	66.00	7.30
		O3 4 hr	182	33.90	6.87	32.48	22.00	56.65	7.82
		O3 8 hr	182	31.91	6.12	31.52	19.50	49.64	6.99
		NO2 1 hr	273	16.27	8.95	17.00	0.20	57.00	12.00
		NO2 24 hr	273	5.40	3.48	5.00	0.02	16.71	5.24
		CO 8 hr	180	0.26	0.22	0.21	0.01	1.61	0.18
		SO2 1 hr	91	5.80	8.08	2.00	0.00	37.00	8.00
		SO2 24 hr	91	0.79	1.01	0.38	0.00	5.58	1.25
		Mean daily temperature	265	17.05	2.86	16.65	11.66	27.62	3.10
	Summer	PM10 24 hr	179	19.74	7.99	18.46	4.81	56.67	9.50
		PM2.5 24 hr	270	7.78	2.48	7.62	3.21	21.18	3.15
		O3 1 hr	180	31.03	10.87	29.10	14.00	67.00	15.65
		O3 4 hr	182	28.66	9.74	26.63	13.25	59.33	14.00
		O3 8 hr	182	26.48	8.53	24.58	12.13	53.38	11.85
		NO2 1 hr	270	12.57	7.33	12.00	0.30	35.00	9.00

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
		NO2 24 hr	270	3.89	2.46	3.54	0.03	12.57	3.48
		CO 8 hr	182	0.19	0.11	0.15	0.06	0.79	0.14
		SO2 1 hr	90	6.24	7.30	4.00	0.00	36.00	9.00
		SO2 24 hr	90	0.96	1.00	0.71	0.00	4.83	1.25
		Mean daily temperature	270	21.38	3.75	20.67	13.63	32.09	4.53
	Winter	PM10 24 hr	183	13.59	4.53	13.33	6.13	40.30	5.09
		PM2.5 24 hr	276	6.92	2.30	6.61	2.49	21.63	2.72
		O3 1 hr	184	31.48	4.77	32.00	19.00	45.50	6.75
		O3 4 hr	184	30.39	4.89	30.50	17.75	45.05	6.76
		O3 8 hr	184	28.42	5.62	28.88	16.00	44.61	8.64
		NO2 1 hr	276	18.91	8.62	21.50	1.00	35.30	13.70
		NO2 24 hr	276	7.39	4.39	7.34	0.06	17.04	7.73
		CO 8 hr	184	0.61	0.42	0.53	0.04	2.00	0.61
		SO2 1 hr	92	1.05	1.44	1.00	0.00	8.00	1.00
		SO2 24 hr	92	0.20	0.30	0.08	0.00	1.71	0.27

State	Season	Air pollutant	N	Mean	Std Dev	Median	Minimum	Maximum	Quartile Range
		Mean daily temperature	258	15.10	1.96	15.32	10.49	19.68	2.98

Table 1.3. Correlation between air pollutants and temperature by State/Territory, ACHAPS Panel Study

Pearson Correlation Coefficients Prob > |r| under H0: Rho=0 Number of Observations										
ACT	**PM10 24 hr**	**PM2.5 24 hr**	**O3 1 hr**	**O3 4 hr**	**O3 8 hr**	**NO2 1 hr**	**CO 8 hr**	**SO2 1 hr**	**SO2 24 hr**	**Mean daily temperature**
PM10 24 hr	1	0.6382	0.31928	0.30668	0.24057	0.29748	0.2925	.	.	0.40198
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	.	.	<.0001
	364	211	364	364	364	357	355	0	0	94
PM2.5 24 hr	0.6382	1	0.12209	0.10526	-0.00173	0.28855	0.67322	.	.	0.09555
	<.0001		0.0761	0.1265	0.9801	<.0001	<.0001	.	.	0.5229
	211	212	212	212	212	206	211	0	0	47
O3 1 hr	0.31928	0.12209	1	0.98751	0.94109	0.22103	-0.27127	.	.	0.67825
	<.0001	0.0761		<.0001	<.0001	<.0001	<.0001	.	.	<.0001
	364	212	365	365	365	358	356	0	0	94
O3 4 hr	0.30668	0.10526	0.98751	1	0.96705	0.21	-0.29076	.	.	0.66675
	<.0001	0.1265	<.0001		<.0001	<.0001	<.0001	.	.	<.0001
	364	212	365	366	366	358	357	0	0	94
O3 8 hr	0.24057	-0.00173	0.94109	0.96705	1	0.15218	-0.3982	.	.	0.69652
	<.0001	0.9801	<.0001	<.0001		0.0039	<.0001	.	.	<.0001
	364	212	365	366	366	358	357	0	0	94
NO2 1 hr	0.29748	0.28855	0.22103	0.21	0.15218	1	0.43585	.	.	0.28531
	<.0001	<.0001	<.0001	<.0001	0.0039		<.0001	.	.	0.0064
	357	206	358	358	358	358	349	0	0	90
CO 8 hr	0.2925	0.67322	-0.27127	-0.29076	-0.3982	0.43585	1	.	.	0.10629
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001		.	.	0.3079
	355	211	356	357	357	349	357	0	0	94

SO2 1 hr	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.
	0	0	0	0	0	0	0	0	0	0
SO2 24 hr	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.
	0	0	0	0	0	0	0	0	0	0
Mean daily temperature	0.40198	0.09555	0.67825	0.66675	0.69652	0.28531	0.10629	.	.	1
	<.0001	0.5229	<.0001	<.0001	<.0001	0.0064	0.3079	.	.	
	94	47	94	94	94	90	94	0	0	94

Pearson Correlation Coefficients **Prob > |r| under H0: Rho=0** **Number of Observations**										
NSW	**PM10 24 hr**	**PM2.5 24 hr**	**O3 1 hr**	**O3 4 hr**	**O3 8 hr**	**NO2 1 hr**	**CO 8 hr**	**SO2 1 hr**	**SO2 24 hr**	**Mean daily temperature**
PM10 24 hr	1	0.68884	0.20324	0.19156	0.17613	0.13193	0.16602	0.08547	0.08932	0.22972
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0089	0.0063	<.0001
	1868	1321	1775	1778	1779	1686	1048	935	935	1850
PM2.5 24 hr	0.68884	1	0.15512	0.10825	0.00416	0.29414	0.52755	0.26917	0.212	-0.0004
	<.0001		<.0001	<.0001	0.8811	<.0001	<.0001	<.0001	<.0001	0.9884
	1321	1340	1293	1295	1295	1233	522	705	705	1334
O3 1 hr	0.20324	0.15512	1	0.97728	0.89903	0.15284	-0.15463	0.01969	-0.01655	0.11573
	<.0001	<.0001		<.0001	<.0001	<.0001	<.0001	0.548	0.6136	<.0001
	1775	1293	1824	1824	1824	1678	1029	933	933	1806
O3 4 hr	0.19156	0.10825	0.97728	1	0.95148	0.12563	-0.19246	-0.02251	-0.05818	0.09304
	<.0001	<.0001	<.0001		<.0001	<.0001	<.0001	0.4921	0.0755	<.0001
	1778	1295	1824	1827	1827	1679	1030	934	934	1809

O3 8 hr	0.17613	0.00416	0.89903	0.95148	1	0.00932	-0.30385	-0.07402	-0.10452	0.12017
	<.0001	0.8811	<.0001	<.0001		0.7028	<.0001	0.0237	0.0014	<.0001
	1779	1295	1824	1827	1828	1680	1031	934	934	1810
NO2 1 hr	0.13193	0.29414	0.15284	0.12563	0.00932	1	0.48311	0.26466	0.30474	-0.50288
	<.0001	<.0001	<.0001	<.0001	0.7028		<.0001	<.0001	<.0001	<.0001
	1686	1233	1678	1679	1680	1729	983	891	891	1720
CO 8 hr	0.16602	0.52755	-0.15463	-0.19246	-0.30385	0.48311	1	0.36634	0.39465	-0.38887
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001		<.0001	<.0001	<.0001
	1048	522	1029	1030	1031	983	1075	459	459	1062
SO2 1 hr	0.08547	0.26917	0.01969	-0.02251	-0.07402	0.26466	0.36634	1	0.85651	-0.1437
	0.0089	<.0001	0.548	0.4921	0.0237	<.0001	<.0001		<.0001	<.0001
	935	705	933	934	934	891	459	978	978	967
SO2 24 hr	0.08932	0.212	-0.01655	-0.05818	-0.10452	0.30474	0.39465	0.85651	1	-0.19637
	0.0063	<.0001	0.6136	0.0755	0.0014	<.0001	<.0001	<.0001		<.0001
	935	705	933	934	934	891	459	978	978	967
Mean daily temperature	0.22972	-0.0004	0.11573	0.09304	0.12017	-0.50288	-0.38887	-0.1437	-0.19637	1
	<.0001	0.9884	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	
	1850	1334	1806	1809	1810	1720	1062	967	967	1899

Pearson Correlation Coefficients Prob > |r| under H0: Rho=0 Number of Observations										
QLD	**PM10 24 hr**	**PM2.5 24 hr**	**O3 1 hr**	**O3 4 hr**	**O3 8 hr**	**NO2 1 hr**	**CO 8 hr**	**SO2 1 hr**	**SO2 24 hr**	**Mean daily temperature**
PM10 24 hr	1	0.79929	0.27969	0.26791	0.23324	0.41571	0.36363	0.19585	0.00369	0.23966
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0002	0.944	<.0001
	1553	1073	1077	1078	1079	1444	576	364	364	1553
PM2.5 24 hr	0.79929	1	0.4016	0.39484	0.35563	0.42444	0.42211	0.27859	0.08261	0.08434
	<.0001		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.1161	0.0057
	1073	1073	1056	1057	1058	1061	208	363	363	1073
O3 1 hr	0.27969	0.4016	1	0.98661	0.95216	0.14133	-0.12539	0.39289	0.20215	0.14864
	<.0001	<.0001		<.0001	<.0001	<.0001	0.0684	<.0001	0.0001	<.0001
	1077	1056	1077	1077	1077	1065	212	364	364	1077
O3 4 hr	0.26791	0.39484	0.98661	1	0.97939	0.15612	-0.0768	0.38217	0.16193	0.0978
	<.0001	<.0001	<.0001		<.0001	<.0001	0.2656	<.0001	0.0019	0.0013
	1078	1057	1077	1081	1081	1066	212	364	364	1078
O3 8 hr	0.23324	0.35563	0.95216	0.97939	1	0.11865	-0.07588	0.34644	0.12142	0.06483
	<.0001	<.0001	<.0001	<.0001		0.0001	0.2714	<.0001	0.0205	0.0332
	1079	1058	1077	1081	1082	1067	212	364	364	1079
NO2 1 hr	0.41571	0.42444	0.14133	0.15612	0.11865	1	0.61638	0.34806	0.31444	-0.30515
	<.0001	<.0001	<.0001	<.0001	0.0001		<.0001	<.0001	<.0001	<.0001
	1444	1061	1065	1066	1067	1444	569	364	364	1444
CO 8 hr	0.36363	0.42211	-0.12539	-0.0768	-0.07588	0.61638	1	.	.	-0.33515
	<.0001	<.0001	0.0684	0.2656	0.2714	<.0001		.	.	<.0001
	576	208	212	212	212	569	577	0	0	576
SO2 1 hr	0.19585	0.27859	0.39289	0.38217	0.34644	0.34806	.	1	0.74984	-0.14579

	0.0002	<.0001	<.0001	<.0001	<.0001	<.0001	.		<.0001	0.0053
	364	363	364	364	364	364	0	364	364	364
SO2 24 hr	0.00369	0.08261	0.20215	0.16193	0.12142	0.31444	.	0.74984	1	-0.08653
	0.944	0.1161	0.0001	0.0019	0.0205	<.0001	.	<.0001		0.0993
	364	363	364	364	364	364	0	364	364	364
Mean daily temperature	0.23966	0.08434	0.14864	0.0978	0.06483	-0.30515	-0.33515	-0.14579	-0.08653	1
	<.0001	0.0057	<.0001	0.0013	0.0332	<.0001	<.0001	0.0053	0.0993	
	1553	1073	1077	1078	1079	1444	576	364	364	1553

Pearson Correlation Coefficients Prob > |r| under H0: Rho=0 Number of Observations										
SA	**PM10 24 hr**	**PM2.5 24 hr**	**O3 1 hr**	**O3 4 hr**	**O3 8 hr**	**NO2 1 hr**	**CO 8 hr**	**SO2 1 hr**	**SO2 24 hr**	**Mean daily temperature**
PM10 24 hr	1	0.63323	0.28606	0.27618	0.27216	0.19167	-0.18389	0.05428	0.07147	0.53123
		<.0001	<.0001	<.0001	<.0001	<.0001	0.0016	0.3003	0.1724	<.0001
	1449	356	1080	1080	1083	1067	292	366	366	1449
PM2.5 24 hr	0.63323	1	0.35834	0.33474	0.29678	0.35898	.	.	.	0.22269
	<.0001		<.0001	<.0001	<.0001	<.0001	.	.	.	<.0001
	356	366	366	366	366	366	0	0	0	360
O3 1 hr	0.28606	0.35834	1	0.98711	0.92494	0.14734	-0.17446	.	.	0.54699
	<.0001	<.0001		<.0001	<.0001	<.0001	0.0028	.	.	<.0001
	1080	366	1094	1094	1094	1081	292	0	0	1084
O3 4 hr	0.27618	0.33474	0.98711	1	0.95353	0.10662	-0.19563	.	.	0.54127
	<.0001	<.0001	<.0001		<.0001	0.0004	0.0008	.	.	<.0001
	1080	366	1094	1095	1095	1081	292	0	0	1084
O3 8 hr	0.27216	0.29678	0.92494	0.95353	1	0.0248	-0.27026	.	.	0.55476
	<.0001	<.0001	<.0001	<.0001		0.4153	<.0001	.	.	<.0001
	1083	366	1094	1095	1098	1081	292	0	0	1087
NO2 1 hr	0.19167	0.35898	0.14734	0.10662	0.0248	1	0.54068	.	.	-0.0834
	<.0001	<.0001	<.0001	0.0004	0.4153		<.0001	.	.	0.0063
	1067	366	1081	1081	1081	1081	285	0	0	1071
CO 8 hr	-0.18389	.	-0.17446	-0.19563	-0.27026	0.54068	1	.	.	-0.47123
	0.0016	.	0.0028	0.0008	<.0001	<.0001		.	.	<.0001
	292	0	292	292	292	285	292	0	0	292
SO2 1 hr	0.05428	.	.	.	.	.	.	1	0.88178	0.12933

	0.3003	.	.	.	.	.	.		<.0001	0.0133
	366	0	0	0	0	0	0	366	366	366
SO2 24 hr	0.07147	.	.	.	.	.	.	0.88178	1	0.08238
	0.1724	.	.	.	.	.	.	<.0001		0.1156
	366	0	0	0	0	0	0	366	366	366
Mean daily temperature	0.53123	0.22269	0.54699	0.54127	0.55476	-0.0834	-0.47123	0.12933	0.08238	1
	<.0001	<.0001	<.0001	<.0001	<.0001	0.0063	<.0001	0.0133	0.1156	
	1449	360	1084	1084	1087	1071	292	366	366	1453

Pearson Correlation Coefficients Prob > |r| under H0: Rho=0 Number of Observations										
VIC	**PM10 24 hr**	**PM2.5 24 hr**	**O3 1 hr**	**O3 4 hr**	**O3 8 hr**	**NO2 1 hr**	**CO 8 hr**	**SO2 1 hr**	**SO2 24 hr**	**Mean daily temperature**
PM10 24 hr	1	0.73284	0.45461	0.43047	0.40683	0.16526	0.15901	0.16114	0.14085	0.40377
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
	2852	730	2502	2503	2503	2822	2424	2123	2123	2842
PM2.5 24 hr	0.73284	1	0.35105	0.30828	0.27336	0.13761	0.25653	0.2037	0.21326	0.19115
	<.0001		<.0001	<.0001	<.0001	0.0002	<.0001	<.0001	<.0001	<.0001
	730	730	727	728	728	730	729	722	722	729
O3 1 hr	0.45461	0.35105	1	0.98778	0.95171	0.10091	-0.14343	0.05532	-0.0298	0.61185
	<.0001	<.0001		<.0001	<.0001	<.0001	<.0001	0.0106	0.1687	<.0001
	2502	727	2517	2517	2517	2496	2089	2135	2135	2508
O3 4 hr	0.43047	0.30828	0.98778	1	0.97047	0.07638	-0.16532	0.03018	-0.06444	0.61033
	<.0001	<.0001	<.0001		<.0001	0.0001	<.0001	0.1632	0.0029	<.0001
	2503	728	2517	2530	2530	2497	2100	2136	2136	2511
O3 8 hr	0.40683	0.27336	0.95171	0.97047	1	0.00813	-0.23497	0.01862	-0.09509	0.64318
	<.0001	<.0001	<.0001	<.0001		0.6846	<.0001	0.3896	<.0001	<.0001
	2503	728	2517	2530	2530	2497	2100	2136	2136	2511
NO2 1 hr	0.16526	0.13761	0.10091	0.07638	0.00813	1	0.5086	0.01474	0.0394	-0.14232
	<.0001	0.0002	<.0001	0.0001	0.6846		<.0001	0.4977	0.0697	<.0001
	2822	730	2496	2497	2497	2855	2418	2120	2120	2845
CO 8 hr	0.15901	0.25653	-0.14343	-0.16532	-0.23497	0.5086	1	0.07381	0.26496	-0.30849
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001		0.0021	<.0001	<.0001
	2424	729	2089	2100	2100	2418	2459	1742	1742	2441
SO2 1 hr	0.16114	0.2037	0.05532	0.03018	0.01862	0.01474	0.07381	1	0.7728	-0.00196

	<.0001	<.0001	0.0106	0.1632	0.3896	0.4977	0.0021		<.0001	0.9279
	2123	722	2135	2136	2136	2120	1742	2138	2138	2129
SO2 24 hr	0.14085	0.21326	-0.0298	-0.06444	-0.09509	0.0394	0.26496	0.7728	1	-0.09786
	<.0001	<.0001	0.1687	0.0029	<.0001	0.0697	<.0001	<.0001		<.0001
	2123	722	2135	2136	2136	2120	1742	2138	2138	2129
Mean daily temperature	0.40377	0.19115	0.61185	0.61033	0.64318	-0.14232	-0.30849	-0.00196	-0.09786	1
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.9279	<.0001	
	2842	729	2508	2511	2511	2845	2441	2129	2129	2891

Pearson Correlation Coefficients Prob > |r| under H0: Rho=0 Number of Observations										
WA	**PM10 24 hr**	**PM2.5 24 hr**	**O3 1 hr**	**O3 4 hr**	**O3 8 hr**	**NO2 1 hr**	**CO 8 hr**	**SO2 1 hr**	**SO2 24 hr**	**Mean daily temperature**
PM10 24 hr	1	0.72287	0.26191	0.18594	0.11624	0.01308	-0.13568	0.42244	0.49723	0.50473
		<.0001	<.0001	0.0004	0.0268	0.7247	0.0002	<.0001	<.0001	<.0001
	728	728	363	363	363	728	726	363	363	720
PM2.5 24 hr	0.72287	1	0.32415	0.26959	0.20195	0.15467	0.28552	0.2867	0.35324	0.24365
	<.0001		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
	728	1095	730	730	730	1095	728	365	365	1069
O3 1 hr	0.26191	0.32415	1	0.97585	0.9	0.19824	-0.0561	0.3248	0.23	0.40343
	<.0001	<.0001		<.0001	<.0001	<.0001	0.2851	<.0001	<.0001	<.0001
	363	730	730	730	730	730	365	365	365	712
O3 4 hr	0.18594	0.26959	0.97585	1	0.95478	0.1615	-0.04612	0.23962	0.13094	0.34215
	0.0004	<.0001	<.0001		<.0001	<.0001	0.379	<.0001	0.0123	<.0001
	363	730	730	732	732	730	366	365	365	712
O3 8 hr	0.11624	0.20195	0.9	0.95478	1	0.02938	-0.13177	0.11293	0.0028	0.30044
	0.0268	<.0001	<.0001	<.0001		0.4279	0.0116	0.031	0.9575	<.0001
	363	730	730	732	732	730	366	365	365	712
NO2 1 hr	0.01308	0.15467	0.19824	0.1615	0.02938	1	0.44762	0.43283	0.38251	-0.08292
	0.7247	<.0001	<.0001	<.0001	0.4279		<.0001	<.0001	<.0001	0.0067
	728	1095	730	730	730	1095	728	365	365	1069
CO 8 hr	-0.13568	0.28552	-0.0561	-0.04612	-0.13177	0.44762	1	-0.19062	-0.13895	-0.33503
	0.0002	<.0001	0.2851	0.379	0.0116	<.0001		0.0002	0.0078	<.0001
	726	728	365	366	366	728	730	365	365	720
SO2 1 hr	0.42244	0.2867	0.3248	0.23962	0.11293	0.43283	-0.19062	1	0.90908	0.43856

	<.0001	<.0001	<.0001	<.0001	0.031	<.0001	0.0002		<.0001	<.0001
	363	365	365	365	365	365	365	365	365	365
SO2 24 hr	0.49723	0.35324	0.23	0.13094	0.0028	0.38251	-0.13895	0.90908	1	0.42288
	<.0001	<.0001	<.0001	0.0123	0.9575	<.0001	0.0078	<.0001		<.0001
	363	365	365	365	365	365	365	365	365	365
Mean daily temperature	0.50473	0.24365	0.40343	0.34215	0.30044	-0.08292	-0.33503	0.43856	0.42288	1
	<.0001	<.0001	<.0001	<.0001	<.0001	0.0067	<.0001	<.0001	<.0001	
	720	1069	712	712	712	1069	720	365	365	1069

2. Air Pollution and Health Outcomes: Mixed Models

Table 2.1. Air pollution and health outcomes, All air pollutants with interaction terms, MIXED-GLIMMIX models

Pollutant	Lag	Evening PEF	Evening FEV1	Morning PEF	Morning FEV1
CO8hrmax	lag0	0.5490 (-13.762 to 14.8604), p=0.94	0.0228 (-0.0756 to 0.1212), p=0.65		
CO8hrmax	lag1	5.3164 (-8.8404 to 19.4732), p=0.46	0.0443 (-0.0526 to 0.1413), p=0.37	1.9066 (-8.6810 to 12.4943), p=0.72	-0.0319 (-0.1088 to 0.0450), p=0.42
CO8hrmax	lag2	0.5428 (-13.935 to 15.0201), p=0.94	-0.0027 (-0.1016 to 0.0962), p=0.96	-5.4271 (-15.771 to 4.9173), p=0.30	-0.0295 (-0.1052 to 0.0463), p=0.45
CO8hrmax	lag3			4.8370 (-4.6149 to 14.2889), p=0.32	0.0140 (-0.0552 to 0.0832), p=0.69
NO21hr	lag0	0.0586 (-0.3451 to 0.4623), p=0.78	-0.0003 (-0.0030 to 0.0024), p=0.81		
NO21hr	lag1	0.0155 (-0.3831 to 0.4140), p=0.94	0.0011 (-0.0015 to 0.0038), p=0.41	0.2165 (-0.0772 to 0.5101), p=0.15	0.0016 (-0.0006 to 0.0037), p=0.15
NO21hr	lag2	0.1877 (-0.2250 to 0.6003), p=0.37	0.0009 (-0.0019 to 0.0037), p=0.52	-0.3102 (-0.6241 to 0.0038), p=0.053	-0.0030 (-0.0052 to -0.0008), p=0.007
NO21hr	lag3			0.3541 (0.0439 to 0.6642), p=0.025	0.0017 (-0.0005 to 0.0039), p=0.13
NO224hr	lag0	0.2562 (-0.5916 to 1.1041), p=0.55	0.0022 (-0.0035 to 0.0078), p=0.45		
NO224hr	lag1	-0.2076 (-1.0393 to 0.6242), p=0.62	0.0008 (-0.0047 to 0.0064), p=0.77	0.0037 (-0.6227 to 0.6301), p=0.99	-0.0026 (-0.0070 to 0.0019), p=0.26
NO224hr	lag2	0.3475 (-0.4809 to 1.1759), p=0.41	0.0016 (-0.0040 to 0.0073), p=0.57	-0.0702 (-0.7089 to 0.5685), p=0.83	-0.0026 (-0.0071 to 0.0019), p=0.26
NO224hr	lag3			0.2670 (-0.3603 to 0.8943), p=0.40	0.0017 (-0.0028 to 0.0061), p=0.46
O31hr	lag0	-0.1139 (-0.4480 to 0.2201), p=0.50	-0.0005 (-0.0027 to 0.0018), p=0.68		
O31hr	lag1	-0.0409 (-0.3590 to 0.2772), p=0.80	-0.0009 (-0.0031 to 0.0012), p=0.39	0.1636 (-0.0668 to 0.3939), p=0.16	0.0007 (-0.0009 to 0.0023), p=0.39
O31hr	lag2	0.1639 (-0.1568 to 0.4847), p=0.32	0.0009 (-0.0013 to 0.0030), p=0.42	-0.0331 (-0.2679 to 0.2018), p=0.78	-0.0005 (-0.0021 to 0.0011), p=0.57
O31hr	lag3			-0.1207 (-0.3520 to 0.1106), p=0.31	-0.0003 (-0.0018 to 0.0013), p=0.75
O34hrmax	lag0	-0.2039 (-0.5728 to 0.1649), p=0.28	-0.0012 (-0.0037 to 0.0013), p=0.34		
O34hrmax	lag1	-0.0249 (-0.3744 to 0.3247), p=0.89	-0.0007 (-0.0030 to 0.0016), p=0.56	0.1664 (-0.0902 to 0.4230), p=0.20	0.0007 (-0.0011 to 0.0025), p=0.43

O34hrmax	lag2	0.2023 (-0.1484 to 0.5530), p=0.26	0.0009 (-0.0015 to 0.0032), p=0.46	0.0000 (-0.2594 to 0.2595), p=1.00	-0.0003 (-0.0020 to 0.0015), p=0.75
O34hrmax	lag3			-0.1383 (-0.3921 to 0.1156), p=0.29	-0.0003 (-0.0020 to 0.0014), p=0.74
O38hrmax	lag0	-0.2220 (-0.6396 to 0.1956), p=0.30	-0.0018 (-0.0046 to 0.0010), p=0.20		
O38hrmax	lag1	0.0069 (-0.3950 to 0.4088), p=0.97	-0.0004 (-0.0031 to 0.0023), p=0.77	0.1783 (-0.1197 to 0.4764), p=0.24	0.0008 (-0.0013 to 0.0028), p=0.46
O38hrmax	lag2	0.2517 (-0.1579 to 0.6613), p=0.23	0.0012 (-0.0016 to 0.0040), p=0.40	0.0006 (-0.3077 to 0.3089), p=1.00	-0.0000 (-0.0021 to 0.0021), p=0.98
O38hrmax	lag3			-0.1043 (-0.4105 to 0.2019), p=0.50	-0.0006 (-0.0027 to 0.0015), p=0.58
SO21hr	lag0	0.2848 (-0.0329 to 0.6026), p=0.079	0.0011 (-0.0011 to 0.0033), p=0.31		
SO21hr	lag1	-0.0750 (-0.3208 to 0.1708), p=0.55	0.0007 (-0.0010 to 0.0025), p=0.40	0.0362 (-0.1621 to 0.2345), p=0.72	0.0002 (-0.0011 to 0.0015), p=0.76
SO21hr	lag2	-0.0810 (-0.3682 to 0.2062), p=0.58	-0.0014 (-0.0034 to 0.0006), p=0.18	0.1137 (-0.0906 to 0.3179), p=0.28	0.0005 (-0.0009 to 0.0018), p=0.47
SO21hr	lag3			-0.1482 (-0.3499 to 0.0536), p=0.15	0.0001 (-0.0013 to 0.0014), p=0.94
SO224hr	lag0	1.6181 (0.1404 to 3.0958), p=0.032	0.0052 (-0.0049 to 0.0154), p=0.31		
SO224hr	lag1	-1.0652 (-2.5482 to 0.4179), p=0.16	0.0022 (-0.0081 to 0.0125), p=0.68	-0.6026 (-1.7145 to 0.5094), p=0.29	-0.0044 (-0.0119 to 0.0031), p=0.25
SO224hr	lag2	0.4314 (-1.1946 to 2.0575), p=0.60	-0.0009 (-0.0122 to 0.0104), p=0.87	1.2686 (0.0857 to 2.4514), p=0.036	0.0078 (0.0000 to 0.0157), p=0.050
SO224hr	lag3			-1.0547 (-2.2404 to 0.1310), p=0.081	-0.0048 (-0.0127 to 0.0032), p=0.24
pm1024hr	lag0	-0.0619 (-0.3833 to 0.2595), p=0.71	0.0004 (-0.0018 to 0.0025), p=0.74		
pm1024hr	lag1	0.1204 (-0.2078 to 0.4487), p=0.47	0.0008 (-0.0013 to 0.0030), p=0.46	0.1880 (-0.0564 to 0.4324), p=0.13	0.0011 (-0.0006 to 0.0028), p=0.21
pm1024hr	lag2	-0.0279 (-0.3741 to 0.3183), p=0.87	-0.0001 (-0.0025 to 0.0022), p=0.91	-0.0155 (-0.2834 to 0.2523), p=0.91	0.0001 (-0.0018 to 0.0020), p=0.94
pm1024hr	lag3			-0.0899 (-0.3755 to 0.1957), p=0.54	-0.0006 (-0.0026 to 0.0014), p=0.57
pm2524hr	lag0	-0.2076 (-1.7232 to 1.3080), p=0.79	-0.0022 (-0.0119 to 0.0076), p=0.66		
pm2524hr	lag1	0.8534 (-0.5868 to 2.2936), p=0.25	0.0058 (-0.0036 to 0.0151), p=0.23	0.1960 (-0.8843 to 1.2762), p=0.72	0.0024 (-0.0056 to 0.0103), p=0.56
pm2524hr	lag2	0.3709 (-1.0164 to 1.7583), p=0.60	0.0001 (-0.0091 to 0.0092), p=0.99	0.2315 (-0.8657 to 1.3286), p=0.68	0.0037 (-0.0043 to 0.0118), p=0.37
pm2524hr	lag3			-0.8327 (-1.9529 to 0.2874), p=0.15	-0.0035 (-0.0116 to 0.0046), p=0.40

Table 2.2. Air pollution and health outcomes, All air pollutants with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Night cough	Night wheeze	Night shortness of breath	Any night symptoms	Any night reliever medications use
CO 8hr max						
CO8hrmax	lag1	1.6304 (0.9819 to 2.7073), p=0.059	1.8501 (0.9353 to 3.6594), p=0.077	2.3444 (1.0130 to 5.4260), p=0.047	1.5380 (0.9296 to 2.5445), p=0.094	1.1206 (0.5303 to 2.3680), p=0.77
CO8hrmax	lag2	1.9233 (1.1552 to 3.2020), p=0.012	1.8100 (0.9163 to 3.5751), p=0.088	1.9437 (0.8032 to 4.7034), p=0.14	1.9502 (1.1704 to 3.2498), p=0.010	0.7411 (0.3443 to 1.5955), p=0.44
CO8hrmax	lag3	1.0988 (0.6760 to 1.7862), p=0.70	1.0803 (0.5623 to 2.0754), p=0.82	1.5933 (0.6735 to 3.7691), p=0.29	1.0118 (0.6273 to 1.6320), p=0.96	1.0453 (0.5199 to 2.1016), p=0.90
NO2 1hr						
NO21hr	lag1	1.0164 (0.9984 to 1.0347), p=0.074	1.0116 (0.9868 to 1.0371), p=0.36	1.0304 (0.9961 to 1.0660), p=0.083	1.0165 (0.9996 to 1.0338), p=0.056	1.0102 (0.9828 to 1.0383), p=0.47
NO21hr	lag2	1.0282 (1.0096 to 1.0473), p=0.003	1.0180 (0.9923 to 1.0445), p=0.17	1.0104 (0.9746 to 1.0474), p=0.57	1.0244 (1.0067 to 1.0424), p=0.007	0.9968 (0.9689 to 1.0255), p=0.83
NO21hr	lag3	1.0257 (1.0066 to 1.0451), p=0.008	1.0201 (0.9934 to 1.0474), p=0.14	1.0110 (0.9725 to 1.0509), p=0.58	1.0227 (1.0047 to 1.0410), p=0.013	1.0110 (0.9824 to 1.0404), p=0.45
NO2 24hr						
NO224hr	lag1	1.0504 (1.0175 to 1.0844), p=0.002	1.0640 (1.0186 to 1.1114), p=0.005	1.0771 (1.0183 to 1.1392), p=0.010	1.0442 (1.0126 to 1.0768), p=0.006	1.0459 (0.9973 to 1.0969), p=0.064
NO224hr	lag2	1.0599 (1.0261 to 1.0948), p=0.0004	1.0545 (1.0083 to 1.1028), p=0.020	1.0545 (0.9923 to 1.1207), p=0.087	1.0577 (1.0250 to 1.0915), p=0.0005	1.0358 (0.9867 to 1.0873), p=0.16
NO224hr	lag3	1.0757 (1.0407 to 1.1118), p=0.0000	1.0581 (1.0124 to 1.1057), p=0.012	1.0283 (0.9658 to 1.0947), p=0.38	1.0682 (1.0349 to 1.1026), p=0.0000	1.0439 (0.9943 to 1.0959), p=0.083
O3 1hr						

O31hr	lag1	0.9935 (0.9783 to 1.0089), p=0.40	0.9805 (0.9598 to 1.0017), p=0.071	0.9598 (0.9277 to 0.9929), p=0.018	0.9924 (0.9786 to 1.0064), p=0.28	0.9945 (0.9715 to 1.0181), p=0.64
O31hr	lag2	0.9999 (0.9840 to 1.0161), p=0.99	0.9753 (0.9523 to 0.9988), p=0.039	0.9675 (0.9326 to 1.0038), p=0.078	1.0005 (0.9859 to 1.0153), p=0.95	0.9927 (0.9684 to 1.0176), p=0.56
O31hr	lag3	0.9946 (0.9782 to 1.0114), p=0.53	0.9636 (0.9404 to 0.9874), p=0.003	0.9613 (0.9256 to 0.9984), p=0.041	0.9892 (0.9742 to 1.0045), p=0.17	0.9891 (0.9635 to 1.0154), p=0.41
O3 4hr max						
O34hrmax	lag1	0.9931 (0.9770 to 1.0095), p=0.41	0.9751 (0.9533 to 0.9975), p=0.029	0.9558 (0.9223 to 0.9905), p=0.013	0.9911 (0.9765 to 1.0060), p=0.24	0.9932 (0.9688 to 1.0183), p=0.59
O34hrmax	lag2	0.9990 (0.9821 to 1.0162), p=0.91	0.9703 (0.9460 to 0.9951), p=0.019	0.9616 (0.9248 to 0.9998), p=0.049	0.9985 (0.9830 to 1.0143), p=0.85	0.9919 (0.9660 to 1.0185), p=0.55
O34hrmax	lag3	0.9941 (0.9766 to 1.0119), p=0.51	0.9604 (0.9359 to 0.9855), p=0.002	0.9581 (0.9204 to 0.9972), p=0.036	0.9892 (0.9732 to 1.0054), p=0.19	0.9844 (0.9575 to 1.0120), p=0.27
O3 8hr max						
O38hrmax	lag1	0.9906 (0.9728 to 1.0087), p=0.31	0.9619 (0.9383 to 0.9862), p=0.002	0.9519 (0.9162 to 0.9890), p=0.011	0.9882 (0.9722 to 1.0043), p=0.15	0.9899 (0.9632 to 1.0174), p=0.47
O38hrmax	lag2	0.9949 (0.9762 to 1.0140), p=0.60	0.9562 (0.9299 to 0.9832), p=0.002	0.9537 (0.9139 to 0.9952), p=0.029	0.9933 (0.9763 to 1.0107), p=0.45	0.9846 (0.9560 to 1.0141), p=0.30
O38hrmax	lag3	0.9926 (0.9732 to 1.0125), p=0.46	0.9530 (0.9263 to 0.9805), p=0.0009	0.9536 (0.9129 to 0.9960), p=0.032	0.9883 (0.9707 to 1.0062), p=0.20	0.9750 (0.9454 to 1.0055), p=0.11
SO2 1hr						
SO21hr	lag1	1.0048 (0.9915 to 1.0184), p=0.48	1.0027 (0.9795 to 1.0264), p=0.82	0.9401 (0.8725 to 1.0129), p=0.10	1.0055 (0.9928 to 1.0184), p=0.40	1.0255 (1.0033 to 1.0482), p=0.024
SO21hr	lag2	0.9939 (0.9797 to 1.0084), p=0.41	0.9995 (0.9743 to 1.0252), p=0.97	0.9192 (0.8480 to 0.9964), p=0.041	0.9974 (0.9839 to 1.0111), p=0.71	1.0195 (0.9977 to 1.0417), p=0.080

SO21hr	lag3	1.0046 (0.9904 to 1.0190), p=0.52	0.9966 (0.9697 to 1.0241), p=0.80	0.9199 (0.8452 to 1.0013), p=0.054	1.0042 (0.9904 to 1.0181), p=0.56	0.9509 (0.8986 to 1.0062), p=0.081
SO2 24hr						
SO224hr	lag1	0.9787 (0.9053 to 1.0582), p=0.59	0.9786 (0.8575 to 1.1168), p=0.75	0.8482 (0.6143 to 1.1711), p=0.32	0.9843 (0.9142 to 1.0597), p=0.67	1.1044 (0.9660 to 1.2627), p=0.15
SO224hr	lag2	0.9506 (0.8750 to 1.0327), p=0.23	1.0062 (0.8813 to 1.1488), p=0.93	0.8827 (0.6656 to 1.1706), p=0.39	0.9785 (0.9054 to 1.0575), p=0.58	1.0571 (0.9146 to 1.2217), p=0.45
SO224hr	lag3	0.9948 (0.9184 to 1.0776), p=0.90	0.9068 (0.7682 to 1.0704), p=0.25	0.6063 (0.4053 to 0.9069), p=0.015	0.9850 (0.9110 to 1.0652), p=0.71	0.8244 (0.6575 to 1.0336), p=0.094
PM10 24hr						
pm1024hr	lag1	1.0187 (1.0047 to 1.0329), p=0.009	1.0190 (0.9988 to 1.0396), p=0.065	1.0034 (0.9725 to 1.0354), p=0.83	1.0131 (0.9994 to 1.0269), p=0.060	1.0013 (0.9776 to 1.0255), p=0.92
pm1024hr	lag2	1.0180 (1.0041 to 1.0322), p=0.011	1.0238 (1.0036 to 1.0444), p=0.021	1.0166 (0.9862 to 1.0479), p=0.29	1.0163 (1.0029 to 1.0298), p=0.017	0.9813 (0.9542 to 1.0092), p=0.19
pm1024hr	lag3	1.0173 (1.0024 to 1.0325), p=0.023	1.0151 (0.9938 to 1.0368), p=0.17	1.0112 (0.9772 to 1.0464), p=0.52	1.0138 (0.9996 to 1.0282), p=0.057	0.9948 (0.9679 to 1.0225), p=0.71
PM2.5 24hr						
pm2524hr	lag1	1.0285 (0.9539 to 1.1088), p=0.46	1.0401 (0.9333 to 1.1592), p=0.48	0.9944 (0.8520 to 1.1606), p=0.94	1.0180 (0.9493 to 1.0918), p=0.62	0.9286 (0.8274 to 1.0421), p=0.21
pm2524hr	lag2	1.0767 (0.9998 to 1.1596), p=0.051	1.0222 (0.9145 to 1.1425), p=0.70	1.0503 (0.8938 to 1.2343), p=0.55	1.0553 (0.9844 to 1.1313), p=0.13	0.9342 (0.8334 to 1.0472), p=0.24
pm2524hr	lag3	1.0718 (0.9928 to 1.1570), p=0.076	0.9851 (0.8803 to 1.1025), p=0.79	1.0302 (0.8824 to 1.2027), p=0.71	1.0418 (0.9703 to 1.1186), p=0.26	0.9544 (0.8537 to 1.0669), p=0.41

Table 2.3. Air pollution and health outcomes, All air pollutants with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day cough	Day wheeze	Day shortness of breath	Day runny nose	Day eye irritation	Day fever	Any day symptoms
CO 8hr max								
CO8hrmax	lag0	1.5407 (0.9323 to 2.5461), p=0.092	2.7767 (1.5451 to 4.9897), p=0.0006	1.3386 (0.6802 to 2.6343), p=0.40	1.2845 (0.7714 to 2.1388), p=0.34	0.4708 (0.1950 to 1.1365), p=0.094	0.8095 (0.3938 to 1.6642), p=0.57	1.5834 (1.0025 to 2.5008), p=0.049
CO8hrmax	lag1	1.2686 (0.7630 to 2.1092), p=0.36	1.6562 (0.9086 to 3.0192), p=0.100	1.1589 (0.5752 to 2.3351), p=0.68	1.1641 (0.6912 to 1.9608), p=0.57	0.6731 (0.2932 to 1.5450), p=0.35	0.7040 (0.3427 to 1.4459), p=0.34	1.2596 (0.7916 to 2.0044), p=0.33
CO8hrmax	lag2	1.5223 (0.9179 to 2.5245), p=0.10	1.4512 (0.7972 to 2.6416), p=0.22	1.1550 (0.5763 to 2.3149), p=0.68	1.2208 (0.7202 to 2.0693), p=0.46	0.9836 (0.4286 to 2.2574), p=0.97	0.8661 (0.4185 to 1.7924), p=0.70	1.1934 (0.7480 to 1.9040), p=0.46
NO2 1hr								
NO21hr	lag0	1.0150 (0.9984 to 1.0318), p=0.077	1.0356 (1.0130 to 1.0586), p=0.002	1.0212 (0.9949 to 1.0483), p=0.11	1.0008 (0.9840 to 1.0179), p=0.93	0.9863 (0.9605 to 1.0129), p=0.31	0.9998 (0.9762 to 1.0239), p=0.98	1.0052 (0.9910 to 1.0197), p=0.47
NO21hr	lag1	1.0144 (0.9976 to 1.0316), p=0.094	1.0230 (1.0007 to 1.0458), p=0.043	1.0208 (0.9927 to 1.0497), p=0.15	1.0040 (0.9866 to 1.0216), p=0.66	0.9895 (0.9636 to 1.0161), p=0.44	0.9862 (0.9626 to 1.0105), p=0.26	1.0045 (0.9899 to 1.0192), p=0.55
NO21hr	lag2	1.0186 (1.0013 to 1.0362), p=0.035	1.0040 (0.9816 to 1.0269), p=0.73	1.0101 (0.9828 to 1.0382), p=0.47	0.9893 (0.9719 to 1.0069), p=0.23	0.9985 (0.9715 to 1.0262), p=0.91	0.9921 (0.9679 to 1.0169), p=0.53	0.9995 (0.9847 to 1.0145), p=0.94
NO2 24hr								
NO224hr	lag0	1.0535 (1.0219 to 1.0861), p=0.0008	1.1107 (1.0681 to 1.1550), p=0.0000	1.0594 (1.0134 to 1.1075), p=0.011	1.0153 (0.9835 to 1.0481), p=0.35	0.9825 (0.9325 to 1.0352), p=0.51	1.0112 (0.9689 to 1.0552), p=0.61	1.0387 (1.0109 to 1.0673), p=0.006
NO224hr	lag1	1.0387 (1.0071 to 1.0713), p=0.016	1.0730 (1.0320 to 1.1155), p=0.0004	1.0557 (1.0075 to 1.1063), p=0.023	1.0141 (0.9815 to 1.0477), p=0.40	0.9792 (0.9302 to 1.0308), p=0.42	0.9799 (0.9385 to 1.0232), p=0.36	1.0212 (0.9933 to 1.0499), p=0.14

NO224hr	lag2	1.0494 (1.0170 to 1.0829), p=0.003	1.0402 (1.0002 to 1.0818), p=0.049	1.0426 (0.9950 to 1.0925), p=0.080	0.9966 (0.9641 to 1.0303), p=0.84	0.9971 (0.9456 to 1.0513), p=0.91	0.9878 (0.9454 to 1.0320), p=0.58	1.0202 (0.9921 to 1.0491), p=0.16
O3 1hr								
O31hr	lag0	0.9899 (0.9762 to 1.0039), p=0.16	0.9980 (0.9789 to 1.0175), p=0.84	1.0118 (0.9889 to 1.0352), p=0.31	1.0023 (0.9881 to 1.0166), p=0.76	0.9985 (0.9750 to 1.0225), p=0.90	0.9910 (0.9712 to 1.0111), p=0.38	0.9948 (0.9833 to 1.0065), p=0.38
O31hr	lag1	0.9923 (0.9778 to 1.0070), p=0.30	0.9855 (0.9661 to 1.0053), p=0.15	1.0096 (0.9842 to 1.0357), p=0.46	0.9981 (0.9833 to 1.0132), p=0.81	0.9988 (0.9755 to 1.0227), p=0.92	0.9922 (0.9718 to 1.0130), p=0.46	0.9945 (0.9824 to 1.0067), p=0.37
O31hr	lag2	0.9942 (0.9791 to 1.0096), p=0.46	0.9830 (0.9622 to 1.0042), p=0.12	0.9978 (0.9720 to 1.0243), p=0.87	0.9954 (0.9800 to 1.0110), p=0.56	1.0025 (0.9760 to 1.0297), p=0.86	0.9922 (0.9709 to 1.0141), p=0.48	0.9907 (0.9782 to 1.0034), p=0.15
O3 4hr max								
O34hrmax	lag0	0.9891 (0.9745 to 1.0039), p=0.15	0.9959 (0.9758 to 1.0165), p=0.70	1.0126 (0.9886 to 1.0372), p=0.30	1.0022 (0.9872 to 1.0174), p=0.78	1.0034 (0.9788 to 1.0287), p=0.79	0.9923 (0.9715 to 1.0137), p=0.48	0.9940 (0.9818 to 1.0064), p=0.34
O34hrmax	lag1	0.9910 (0.9756 to 1.0066), p=0.26	0.9804 (0.9601 to 1.0012), p=0.065	1.0103 (0.9838 to 1.0374), p=0.45	0.9974 (0.9817 to 1.0133), p=0.75	1.0010 (0.9764 to 1.0262), p=0.94	0.9930 (0.9715 to 1.0150), p=0.53	0.9939 (0.9811 to 1.0069), p=0.36
O34hrmax	lag2	0.9910 (0.9749 to 1.0074), p=0.28	0.9826 (0.9607 to 1.0049), p=0.13	0.9987 (0.9714 to 1.0267), p=0.93	0.9951 (0.9788 to 1.0117), p=0.56	1.0042 (0.9763 to 1.0330), p=0.77	0.9934 (0.9708 to 1.0166), p=0.57	0.9884 (0.9751 to 1.0020), p=0.094
O3 8hr max								
O38hrmax	lag0	0.9869 (0.9711 to 1.0029), p=0.11	0.9944 (0.9729 to 1.0164), p=0.61	1.0138 (0.9880 to 1.0403), p=0.30	1.0064 (0.9902 to 1.0230), p=0.44	1.0071 (0.9799 to 1.0350), p=0.61	0.9923 (0.9698 to 1.0153), p=0.51	0.9953 (0.9821 to 1.0086), p=0.49
O38hrmax	lag1	0.9850 (0.9684 to 1.0020), p=0.083	0.9737 (0.9518 to 0.9961), p=0.022	1.0065 (0.9781 to 1.0357), p=0.66	0.9971 (0.9802 to 1.0144), p=0.74	1.0023 (0.9749 to 1.0305), p=0.87	0.9928 (0.9697 to 1.0165), p=0.55	0.9919 (0.9781 to 1.0059), p=0.25
O38hrmax	lag2	0.9825 (0.9648	0.9755 (0.9518	0.9929 (0.9628	0.9942 (0.9762	1.0078 (0.9771	0.9900 (0.9654	0.9839 (0.9693 to

		to 1.0006), p=0.057	to 0.9998), p=0.048	to 1.0240), p=0.65	to 1.0126), p=0.54	to 1.0394), p=0.62	to 1.0151), p=0.43	0.9989), p=0.035
SO2 1hr								
SO21hr	lag0	0.9993 (0.9875 to 1.0113), p=0.91	0.9736 (0.9327 to 1.0162), p=0.22	0.9806 (0.9377 to 1.0256), p=0.39	1.0092 (0.9961 to 1.0225), p=0.17	0.9634 (0.9140 to 1.0156), p=0.17	1.0007 (0.9767 to 1.0252), p=0.96	1.0034 (0.9938 to 1.0130), p=0.49
SO21hr	lag1	0.9974 (0.9856 to 1.0093), p=0.66	0.9900 (0.9584 to 1.0225), p=0.54	0.9922 (0.9491 to 1.0373), p=0.73	1.0051 (0.9925 to 1.0178), p=0.43	0.9995 (0.9669 to 1.0332), p=0.98	1.0017 (0.9838 to 1.0199), p=0.86	0.9975 (0.9873 to 1.0079), p=0.63
SO21hr	lag2	0.9939 (0.9810 to 1.0069), p=0.35	0.9577 (0.9194 to 0.9976), p=0.038	0.9866 (0.9482 to 1.0266), p=0.51	1.0068 (0.9928 to 1.0210), p=0.34	0.9208 (0.8535 to 0.9933), p=0.033	0.9765 (0.9462 to 1.0078), p=0.14	0.9925 (0.9809 to 1.0042), p=0.21
SO2 24hr								
SO224hr	lag0	1.0047 (0.9405 to 1.0733), p=0.89	0.8608 (0.7185 to 1.0313), p=0.10	0.9327 (0.7679 to 1.1330), p=0.48	1.0551 (0.9808 to 1.1351), p=0.15	0.9959 (0.8530 to 1.1627), p=0.96	0.9275 (0.8004 to 1.0749), p=0.32	1.0250 (0.9693 to 1.0838), p=0.39
SO224hr	lag1	0.9634 (0.8934 to 1.0389), p=0.33	0.8705 (0.7374 to 1.0275), p=0.10	0.9225 (0.7358 to 1.1567), p=0.48	1.0413 (0.9654 to 1.1232), p=0.29	0.9675 (0.8120 to 1.1529), p=0.71	0.9665 (0.8599 to 1.0862), p=0.57	0.9860 (0.9256 to 1.0503), p=0.66
SO224hr	lag2	0.9907 (0.9191 to 1.0678), p=0.81	0.7680 (0.6165 to 0.9568), p=0.019	0.9026 (0.7501 to 1.0860), p=0.28	1.0825 (0.9979 to 1.1743), p=0.056	0.8742 (0.6405 to 1.1932), p=0.40	0.8463 (0.7231 to 0.9905), p=0.038	0.9889 (0.9251 to 1.0572), p=0.74
PM10 24hr								
pm1024hr	lag0	1.0058 (0.9922 to 1.0197), p=0.40	1.0211 (1.0034 to 1.0392), p=0.019	1.0070 (0.9850 to 1.0294), p=0.54	1.0040 (0.9888 to 1.0194), p=0.61	0.9847 (0.9603 to 1.0097), p=0.23	1.0054 (0.9851 to 1.0261), p=0.60	0.9990 (0.9869 to 1.0112), p=0.87
pm1024hr	lag1	1.0092 (0.9943 to 1.0243), p=0.23	1.0082 (0.9885 to 1.0284), p=0.42	1.0222 (0.9987 to 1.0463), p=0.064	0.9992 (0.9823 to 1.0165), p=0.93	0.9980 (0.9726 to 1.0241), p=0.88	0.9982 (0.9759 to 1.0211), p=0.88	1.0048 (0.9919 to 1.0179), p=0.47
pm1024hr	lag2	1.0177 (1.0028 to 1.0327),	1.0137 (0.9936 to 1.0341),	1.0118 (0.9874 to 1.0367),	0.9984 (0.9817 to 1.0154),	1.0034 (0.9778 to 1.0296),	1.0086 (0.9873 to 1.0304),	1.0070 (0.9944 to 1.0198), p=0.28

		p=0.019	p=0.18	p=0.35	p=0.85	p=0.80	p=0.43	
PM 2.5 24hr								
pm2524hr	lag0	1.0409 (0.9753 to 1.1109), p=0.23	1.0096 (0.9198 to 1.1082), p=0.84	0.9747 (0.8678 to 1.0948), p=0.67	1.0873 (1.0143 to 1.1656), p=0.018	0.9982 (0.8895 to 1.1201), p=0.98	0.9002 (0.8026 to 1.0096), p=0.072	1.0285 (0.9707 to 1.0897), p=0.34
pm2524hr	lag1	1.0188 (0.9516 to 1.0908), p=0.59	0.9512 (0.8642 to 1.0470), p=0.31	0.9956 (0.8768 to 1.1304), p=0.95	1.0375 (0.9657 to 1.1147), p=0.31	1.0968 (0.9787 to 1.2293), p=0.11	0.9341 (0.8336 to 1.0466), p=0.24	1.0053 (0.9467 to 1.0676), p=0.86
pm2524hr	lag2	1.0460 (0.9759 to 1.1210), p=0.20	0.9668 (0.8778 to 1.0649), p=0.49	1.0152 (0.8952 to 1.1512), p=0.81	1.0210 (0.9490 to 1.0985), p=0.58	1.0759 (0.9562 to 1.2106), p=0.22	0.9723 (0.8707 to 1.0858), p=0.62	1.0229 (0.9624 to 1.0873), p=0.47

Table 2.4. Air pollution and health outcomes, All air pollutants with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day time reliever use for symptoms	Day time preventer use for symptoms	Any day time medication use for symptoms
CO 8hr max				
CO8hrmax	lag0	1.2503 (0.6416 to 2.4365), p=0.51	1.2708 (0.4472 to 3.6110), p=0.65	1.3906 (0.7427 to 2.6037), p=0.30
CO8hrmax	lag1	1.1383 (0.5806 to 2.2318), p=0.71	1.5484 (0.5742 to 4.1751), p=0.39	1.4509 (0.7824 to 2.6907), p=0.24
CO8hrmax	lag2	1.4964 (0.7654 to 2.9257), p=0.24	1.2664 (0.4780 to 3.3549), p=0.63	1.8111 (0.9774 to 3.3557), p=0.059
NO2 1hr				
NO21hr	lag0	1.0117 (0.9879 to 1.0361), p=0.34	1.0088 (0.9739 to 1.0450), p=0.63	1.0097 (0.9878 to 1.0321), p=0.39
NO21hr	lag1	1.0065 (0.9829 to 1.0306), p=0.59	1.0173 (0.9816 to 1.0543), p=0.35	1.0096 (0.9878 to 1.0320), p=0.39
NO21hr	lag2	1.0034 (0.9796 to 1.0278), p=0.78	0.9905 (0.9542 to 1.0282), p=0.62	1.0051 (0.9832 to 1.0274), p=0.65
NO2 24hr				
NO224hr	lag0	1.0537 (1.0110 to 1.0983), p=0.013	1.0339 (0.9714 to 1.1005), p=0.29	1.0480 (1.0080 to 1.0897), p=0.018
NO224hr	lag1	1.0480 (1.0058 to 1.0920), p=0.025	1.0430 (0.9797 to 1.1104), p=0.19	1.0473 (1.0079 to 1.0883), p=0.018
NO224hr	lag2	1.0478 (1.0049 to 1.0925), p=0.029	1.0410 (0.9763 to 1.1100), p=0.22	1.0570 (1.0166 to 1.0990), p=0.005
O3 1hr				
O31hr	lag0	0.9887 (0.9682 to 1.0096), p=0.29	1.0157 (0.9871 to 1.0452), p=0.29	0.9925 (0.9732 to 1.0123), p=0.46
O31hr	lag1	0.9959 (0.9752 to 1.0171), p=0.70	1.0217 (0.9912 to 1.0531), p=0.16	0.9999 (0.9802 to 1.0200), p=0.99
O31hr	lag2	0.9854 (0.9638 to 1.0074), p=0.19	0.9848 (0.9530 to 1.0177), p=0.36	0.9840 (0.9631 to 1.0053), p=0.14
O3 4hr max				
O34hrmax	lag0	0.9884 (0.9669 to 1.0104), p=0.30	1.0180 (0.9879 to 1.0490), p=0.24	0.9929 (0.9725 to 1.0137), p=0.50
O34hrmax	lag1	0.9916 (0.9698 to 1.0139), p=0.46	1.0163 (0.9847 to 1.0489), p=0.31	0.9961 (0.9753 to 1.0174), p=0.72
O34hrmax	lag2	0.9814 (0.9586 to 1.0047), p=0.12	0.9846 (0.9515 to 1.0188), p=0.37	0.9801 (0.9581 to 1.0027), p=0.084

O3 8hr max				
O38hrmax	lag0	0.9858 (0.9628 to 1.0095), p=0.24	1.0145 (0.9824 to 1.0477), p=0.38	0.9900 (0.9681 to 1.0123), p=0.38
O38hrmax	lag1	0.9838 (0.9601 to 1.0080), p=0.19	1.0048 (0.9709 to 1.0399), p=0.79	0.9887 (0.9663 to 1.0117), p=0.33
O38hrmax	lag2	0.9751 (0.9501 to 1.0008), p=0.058	0.9820 (0.9460 to 1.0194), p=0.34	0.9748 (0.9507 to 0.9996), p=0.046
SO2 1hr				
SO21hr	lag0	0.9820 (0.9503 to 1.0147), p=0.28	0.9921 (0.9530 to 1.0328), p=0.70	1.8111 (0.9774 to 3.3557), p=0.059
SO21hr	lag1	0.9951 (0.9655 to 1.0255), p=0.75	1.0178 (0.9888 to 1.0475), p=0.23	1.0074 (0.9847 to 1.0306), p=0.53
SO21hr	lag2	0.9978 (0.9669 to 1.0297), p=0.89	0.9441 (0.8827 to 1.0097), p=0.093	0.9933 (0.9613 to 1.0265), p=0.69
SO2 24hr				
SO224hr	lag0	0.9259 (0.7974 to 1.0751), p=0.31	0.9962 (0.8375 to 1.1849), p=0.97	0.9470 (0.8321 to 1.0779), p=0.41
SO224hr	lag1	0.9469 (0.8104 to 1.1063), p=0.49	1.0256 (0.8695 to 1.2097), p=0.76	0.9740 (0.8558 to 1.1085), p=0.69
SO224hr	lag2	0.9250 (0.7760 to 1.1025), p=0.38	0.9632 (0.7259 to 1.2781), p=0.79	0.9059 (0.7555 to 1.0862), p=0.29
PM 10 24hr				
pm1024hr	lag0	1.0031 (0.9832 to 1.0235), p=0.76	1.0060 (0.9797 to 1.0331), p=0.66	0.9963 (0.9771 to 1.0160), p=0.71
pm1024hr	lag1	1.0124 (0.9909 to 1.0345), p=0.26	1.0206 (0.9913 to 1.0508), p=0.17	1.0103 (0.9899 to 1.0311), p=0.33
pm1024hr	lag2	1.0110 (0.9887 to 1.0338), p=0.34	1.0335 (1.0012 to 1.0669), p=0.042	1.0132 (0.9922 to 1.0347), p=0.22
PM 2.5 24hr				
pm2524hr	lag0	0.9464 (0.8549 to 1.0478), p=0.29	0.9475 (0.8186 to 1.0967), p=0.47	0.9734 (0.8870 to 1.0682), p=0.57
pm2524hr	lag1	0.9671 (0.8738 to 1.0703), p=0.52	1.0494 (0.9014 to 1.2216), p=0.53	1.0170 (0.9263 to 1.1166), p=0.72
pm2524hr	lag2	0.9250 (0.8329 to 1.0273), p=0.15	0.9841 (0.8408 to 1.1518), p=0.84	0.9771 (0.8879 to 1.0752), p=0.63

3. Ozone: Warm Season Models

Table 3.1. Air pollution and health outcomes, Ozone warm season with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Evening PEF	Evening FEV1	Morning PEF	Morning FEV1
O31hr	lag0	-0.0889 (-0.3522 to 0.1743), p=0.51	-0.0003 (-0.0022 to 0.0016), p=0.75		
O31hr	lag1	-0.0390 (-0.2803 to 0.2023), p=0.75	-0.0006 (-0.0024 to 0.0012), p=0.52	-0.0073 (-0.2975 to 0.2829), p=0.96	0.0000 (-0.0018 to 0.0019), p=0.96
O31hr	lag2	0.1515 (-0.0980 to 0.4011), p=0.23	0.0005 (-0.0013 to 0.0024), p=0.55	0.0033 (-0.2891 to 0.2957), p=0.98	-0.0004 (-0.0023 to 0.0014), p=0.64
O31hr	lag3			-0.0792 (-0.3745 to 0.2161), p=0.60	0.0001 (-0.0017 to 0.0019), p=0.88
O34hr	lag0	-0.1657 (-0.4680 to 0.1366), p=0.28	-0.0009 (-0.0031 to 0.0012), p=0.40		
O34hr	lag1	-0.0091 (-0.2811 to 0.2628), p=0.95	-0.0001 (-0.0022 to 0.0020), p=0.93	0.0170 (-0.3116 to 0.3456), p=0.92	0.0001 (-0.0020 to 0.0021), p=0.94
O34hr	lag2	0.1953 (-0.0849 to 0.4755), p=0.17	0.0003 (-0.0017 to 0.0023), p=0.78	-0.0026 (-0.3302 to 0.3251), p=0.99	-0.0005 (-0.0025 to 0.0016), p=0.64
O34hr	lag3			-0.0512 (-0.3788 to 0.2763), p=0.76	0.0003 (-0.0017 to 0.0023), p=0.75
O38hr	lag0	-0.1718 (-0.5828 to 0.2392), p=0.41	-0.0014 (-0.0041 to 0.0013), p=0.31		
O38hr	lag1	0.0495 (-0.3137 to 0.4128), p=0.79	0.0005 (-0.0020 to 0.0031), p=0.69	0.0559 (-0.3518 to 0.4635), p=0.79	0.0005 (-0.0021 to 0.0030), p=0.71
O38hr	lag2	0.2832 (-0.0611 to 0.6275), p=0.11	0.0005 (-0.0021 to 0.0032), p=0.69	-0.0586 (-0.4664 to 0.3491), p=0.78	-0.0006 (-0.0032 to 0.0019), p=0.63
O38hr	lag3			0.0419 (-0.3708 to 0.4546), p=0.84	0.0003 (-0.0022 to 0.0028), p=0.83

Table 3.2. Air pollution and health outcomes, Ozone warm season with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Night cough	Night wheeze	Night shortness of breath	Any night symptoms	Any night reliever medications use
O3 1hr						
O31hr	lag1	0.9984 (0.9779 to 1.0195), p=0.88	0.9745 (0.9443 to 1.0057), p=0.11	0.9517 (0.9023 to 1.0039), p=0.069	0.9961 (0.9774 to 1.0151), p=0.69	0.9997 (0.9673 to 1.0331), p=0.98
O31hr	lag2	1.0088 (0.9871 to 1.0309), p=0.43	0.9874 (0.9528 to 1.0233), p=0.49	0.9623 (0.9069 to 1.0211), p=0.20	1.0142 (0.9942 to 1.0346), p=0.17	1.0004 (0.9668 to 1.0352), p=0.98
O31hr	lag3	1.0086 (0.9864 to 1.0313), p=0.45	0.9520 (0.9182 to 0.9870), p=0.008	0.9597 (0.9019 to 1.0212), p=0.19	0.9995 (0.9793 to 1.0201), p=0.96	1.0055 (0.9666 to 1.0460), p=0.79
O3 4hr						
O34hr	lag1	0.9980 (0.9756 to 1.0208), p=0.86	0.9691 (0.9364 to 1.0029), p=0.073	0.9471 (0.8941 to 1.0031), p=0.064	0.9943 (0.9741 to 1.0150), p=0.59	0.9988 (0.9634 to 1.0355), p=0.95
O34hr	lag2	1.0098 (0.9861 to 1.0340), p=0.42	0.9837 (0.9464 to 1.0226), p=0.41	0.9594 (0.9001 to 1.0227), p=0.20	1.0134 (0.9917 to 1.0356), p=0.23	1.0024 (0.9652 to 1.0410), p=0.90
O34hr	lag3	1.0107 (0.9866 to 1.0355), p=0.39	0.9466 (0.9097 to 0.9849), p=0.007	0.9546 (0.8926 to 1.0209), p=0.17	1.0013 (0.9793 to 1.0238), p=0.91	1.0086 (0.9654 to 1.0537), p=0.70
O3 8hr						
O38hr	lag1	0.9968 (0.9701 to 1.0242), p=0.82	0.9573 (0.9192 to 0.9971), p=0.036	0.9512 (0.8906 to 1.0159), p=0.14	0.9932 (0.9693 to 1.0176), p=0.58	0.9975 (0.9559 to 1.0410), p=0.91
O38hr	lag2	1.0068 (0.9787 to 1.0357), p=0.64	0.9768 (0.9342 to 1.0214), p=0.30	0.9711 (0.9028 to 1.0446), p=0.43	1.0111 (0.9857 to 1.0371), p=0.39	0.9972 (0.9532 to 1.0432), p=0.90
O38hr	lag3	1.0154 (0.9867 to 1.0449), p=0.30	0.9369 (0.8942 to 0.9817), p=0.006	0.9568 (0.8852 to 1.0342), p=0.27	1.0051 (0.9793 to 1.0317), p=0.70	1.0093 (0.9589 to 1.0623), p=0.72

Table 3.3. Air pollution and health outcomes, Ozone warm season with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day cough	Day wheeze	Day shortness of breath	Day runny nose	Day eye irritation	Day fever	Any day symptoms
O3 1hr								
O31hr	lag0	0.9863 (0.9676 to 1.0054), p=0.16	0.9993 (0.9717 to 1.0276), p=0.96	1.0250 (0.9912 to 1.0601), p=0.15	1.0111 (0.9905 to 1.0321), p=0.29	0.9846 (0.9509 to 1.0194), p=0.38	1.0030 (0.9736 to 1.0334), p=0.84	0.9982 (0.9824 to 1.0142), p=0.82
O31hr	lag1	0.9974 (0.9771 to 1.0180), p=0.80	0.9864 (0.9586 to 1.0150), p=0.35	0.9918 (0.9552 to 1.0298), p=0.67	1.0022 (0.9809 to 1.0239), p=0.84	0.9957 (0.9622 to 1.0305), p=0.81	1.0186 (0.9883 to 1.0497), p=0.23	1.0020 (0.9854 to 1.0188), p=0.82
O31hr	lag2	1.0002 (0.9788 to 1.0221), p=0.98	0.9831 (0.9522 to 1.0150), p=0.29	0.9827 (0.9459 to 1.0209), p=0.37	1.0140 (0.9917 to 1.0368), p=0.22	1.0223 (0.9808 to 1.0655), p=0.30	1.0141 (0.9808 to 1.0486), p=0.41	1.0002 (0.9830 to 1.0176), p=0.99
O3 4hr								
O34hr	lag0	0.9845 (0.9641 to 1.0054), p=0.14	0.9968 (0.9674 to 1.0272), p=0.84	1.0269 (0.9903 to 1.0649), p=0.15	1.0125 (0.9902 to 1.0353), p=0.28	0.9897 (0.9534 to 1.0273), p=0.58	1.0071 (0.9750 to 1.0403), p=0.67	0.9977 (0.9805 to 1.0152), p=0.80
O34hr	lag1	0.9956 (0.9736 to 1.0181), p=0.70	0.9841 (0.9544 to 1.0147), p=0.30	0.9889 (0.9494 to 1.0301), p=0.59	1.0027 (0.9797 to 1.0261), p=0.82	0.9987 (0.9622 to 1.0365), p=0.94	1.0224 (0.9896 to 1.0562), p=0.18	1.0008 (0.9829 to 1.0191), p=0.93
O34hr	lag2	0.9973 (0.9740 to 1.0211), p=0.82	0.9839 (0.9508 to 1.0182), p=0.35	0.9824 (0.9421 to 1.0244), p=0.40	1.0173 (0.9930 to 1.0422), p=0.16	1.0244 (0.9794 to 1.0715), p=0.29	1.0195 (0.9832 to 1.0571), p=0.30	0.9988 (0.9801 to 1.0179), p=0.90
O3 8hr								
O38hr	lag0	0.9826 (0.9585 to 1.0074), p=0.17	0.9988 (0.9648 to 1.0341), p=0.95	1.0372 (0.9933 to 1.0830), p=0.098	1.0226 (0.9958 to 1.0500), p=0.099	0.9899 (0.9479 to 1.0337), p=0.65	1.0202 (0.9817 to 1.0603), p=0.31	1.0017 (0.9814 to 1.0224), p=0.87
O38hr	lag1	0.9909 (0.9652 to 1.0173), p=0.50	0.9820 (0.9480 to 1.0173), p=0.31	0.9858 (0.9398 to 1.0341), p=0.56	1.0059 (0.9790 to 1.0336), p=0.67	0.9966 (0.9543 to 1.0408), p=0.88	1.0352 (0.9964 to 1.0755), p=0.076	1.0018 (0.9807 to 1.0234), p=0.87

O38hr	lag2	0.9898 (0.9626 to 1.0178), p=0.47	0.9821 (0.9440 to 1.0218), p=0.37	0.9775 (0.9293 to 1.0282), p=0.38	1.0270 (0.9979 to 1.0568), p=0.069	1.0301 (0.9789 to 1.0840), p=0.25	1.0279 (0.9859 to 1.0717), p=0.20	0.9988 (0.9767 to 1.0214), p=0.92

Table 3.4. Air pollution and health outcomes, Ozone warm season with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day time reliever use for symptoms	Day time preventer use for symptoms	Any day time medication use for symptoms
O3 1hr				
O31hr	lag0	0.9968 (0.9672 to 1.0273), p=0.83	1.0196 (0.9781 to 1.0628), p=0.36	1.0020 (0.9735 to 1.0313), p=0.89
O31hr	lag1	1.0018 (0.9716 to 1.0329), p=0.91	1.0171 (0.9736 to 1.0625), p=0.45	1.0132 (0.9836 to 1.0437), p=0.38
O31hr	lag2	0.9844 (0.9522 to 1.0176), p=0.35	0.9863 (0.9390 to 1.0361), p=0.58	0.9846 (0.9529 to 1.0172), p=0.35
O3 4hr				
O34hr	lag0	0.9969 (0.9649 to 1.0301), p=0.85	1.0222 (0.9772 to 1.0693), p=0.34	1.0031 (0.9723 to 1.0349), p=0.84
O34hr	lag1	0.9986 (0.9662 to 1.0322), p=0.94	1.0164 (0.9697 to 1.0654), p=0.50	1.0126 (0.9807 to 1.0455), p=0.44
O34hr	lag2	0.9818 (0.9468 to 1.0182), p=0.32	0.9905 (0.9387 to 1.0452), p=0.73	0.9831 (0.9485 to 1.0189), p=0.35
O3 8hr				
O38hr	lag0	1.0036 (0.9663 to 1.0423), p=0.85	1.0248 (0.9732 to 1.0792), p=0.35	1.0066 (0.9707 to 1.0438), p=0.72
O38hr	lag1	0.9933 (0.9559 to 1.0321), p=0.73	1.0077 (0.9560 to 1.0622), p=0.77	1.0099 (0.9735 to 1.0478), p=0.60
O38hr	lag2	0.9725 (0.9315 to 1.0154), p=0.21	0.9933 (0.9335 to 1.0571), p=0.83	0.9791 (0.9386 to 1.0214), p=0.33

4. SO_2: Models Excluding Port Pirie

Table 4.1. Air pollution and health outcomes, SO2 (Port Pirie excluded) with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Evening PEF	Evening FEV1	Morning PEF	Morning FEV1
SO21hr	lag0	0.1918 (-0.5797 to 0.9633), p=0.63	-0.0010 (-0.0063 to 0.0043), p=0.72		
SO21hr	lag1	-0.1427 (-0.8951 to 0.6096), p=0.71	0.0014 (-0.0039 to 0.0066), p=0.61	0.2526 (-0.2815 to 0.7868), p=0.35	0.0015 (-0.0020 to 0.0051), p=0.40
SO21hr	lag2	0.0179 (-0.7337 to 0.7695), p=0.96	-0.0007 (-0.0059 to 0.0046), p=0.81	0.1762 (-0.3372 to 0.6896), p=0.50	0.0014 (-0.0020 to 0.0047), p=0.43
SO21hr	lag3			-0.6132 (-1.1394 to -0.0871), p=0.022	-0.0034 (-0.0069 to 0.0001), p=0.057
SO224h	lag0	0.3566 (-2.9728 to 3.6860), p=0.83	-0.0110 (-0.0339 to 0.0119), p=0.35		
SO224h	lag1	-0.8262 (-4.0907 to 2.4383), p=0.62	0.0088 (-0.0140 to 0.0316), p=0.45	0.3566 (-1.9700 to 2.6832), p=0.76	-0.0022 (-0.0177 to 0.0134), p=0.78
SO224h	lag2	-0.1299 (-3.5071 to 3.2473), p=0.94	-0.0031 (-0.0266 to 0.0204), p=0.80	0.7237 (-1.6062 to 3.0536), p=0.54	0.0067 (-0.0086 to 0.0221), p=0.39
SO224h	lag3			-2.3497 (-4.7141 to 0.0146), p=0.051	-0.0139 (-0.0297 to 0.0018), p=0.083

Table 4.2. Air pollution and health outcomes, SO2 (Port Pirie excluded) with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Night cough	Night wheeze	Night shortness of breath	Any night symptoms	Any night reliever medications use
SO2 1hr						
SO21hr	lag1	1.0124 (0.9764 to 1.0498), p=0.50	1.0082 (0.9575 to 1.0615), p=0.76	0.9844 (0.9039 to 1.0720), p=0.72	1.0118 (0.9774 to 1.0473), p=0.51	1.0161 (0.9617 to 1.0735), p=0.57
SO21hr	lag2	1.0049 (0.9677 to 1.0435), p=0.80	1.0219 (0.9697 to 1.0769), p=0.42	1.0093 (0.9299 to 1.0955), p=0.82	1.0236 (0.9881 to 1.0603), p=0.20	1.0237 (0.9705 to 1.0798), p=0.39
SO21hr	lag3	1.0068 (0.9682 to 1.0470), p=0.73	0.9771 (0.9179 to 1.0400), p=0.47	0.9577 (0.8710 to 1.0530), p=0.37	1.0019 (0.9648 to 1.0405), p=0.92	0.9901 (0.9274 to 1.0570), p=0.76
SO2 24hr						
SO224h	lag1	0.9884 (0.8380 to 1.1657), p=0.89	1.0129 (0.7995 to 1.2833), p=0.92	0.9029 (0.6232 to 1.3081), p=0.59	0.9933 (0.8484 to 1.1629), p=0.93	1.0070 (0.7790 to 1.3018), p=0.96
SO224h	lag2	0.9977 (0.8422 to 1.1819), p=0.98	1.1035 (0.8710 to 1.3981), p=0.41	0.9723 (0.6733 to 1.4040), p=0.88	1.0977 (0.9359 to 1.2874), p=0.25	1.1241 (0.8728 to 1.4476), p=0.36
SO224h	lag3	0.9648 (0.8115 to 1.1471), p=0.69	0.8261 (0.6334 to 1.0774), p=0.16	0.8321 (0.5652 to 1.2248), p=0.35	0.9370 (0.7928 to 1.1075), p=0.45	0.9228 (0.6884 to 1.2372), p=0.59

Table 4.3. Air pollution and health outcomes, SO2 (Port Pirie excluded) with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day cough	Day wheeze	Day shortness of breath	Day runny nose	Day eye irritation	Day fever	Any day symptoms
SO2 1hr								
SO21hr	lag0	1.0405 (1.0053 to 1.0769), p=0.024	0.9830 (0.9338 to 1.0347), p=0.51	0.9991 (0.9412 to 1.0606), p=0.98	1.0323 (0.9976 to 1.0683), p=0.068	1.0182 (0.9571 to 1.0831), p=0.57	0.9693 (0.9198 to 1.0215), p=0.24	1.0289 (0.9992 to 1.0596), p=0.056
SO21hr	lag1	1.0155 (0.9786 to 1.0538), p=0.42	1.0175 (0.9667 to 1.0710), p=0.51	1.0075 (0.9416 to 1.0780), p=0.83	1.0428 (1.0047 to 1.0823), p=0.027	1.0504 (0.9845 to 1.1206), p=0.14	0.9889 (0.9396 to 1.0408), p=0.67	1.0437 (1.0105 to 1.0780), p=0.010
SO21hr	lag2	1.0191 (0.9809 to 1.0588), p=0.33	0.9577 (0.9018 to 1.0170), p=0.16	1.0187 (0.9581 to 1.0832), p=0.55	1.0311 (0.9949 to 1.0685), p=0.093	0.9865 (0.9096 to 1.0698), p=0.74	0.9717 (0.9194 to 1.0270), p=0.31	1.0030 (0.9720 to 1.0350), p=0.85
SO2 24hr								
SO224h	lag0	1.1816 (1.0145 to 1.3764), p=0.032	0.9593 (0.7620 to 1.2077), p=0.72	1.0304 (0.7973 to 1.3317), p=0.82	1.1779 (1.0117 to 1.3714), p=0.035	1.2340 (0.9427 to 1.6153), p=0.13	0.8708 (0.6914 to 1.0967), p=0.24	1.1261 (0.9890 to 1.2821), p=0.073
SO224h	lag1	1.0290 (0.8720 to 1.2142), p=0.74	1.0108 (0.7985 to 1.2797), p=0.93	1.0140 (0.7497 to 1.3714), p=0.93	1.2176 (1.0312 to 1.4377), p=0.020	1.1907 (0.8882 to 1.5962), p=0.24	0.9202 (0.7279 to 1.1634), p=0.49	1.1629 (1.0085 to 1.3408), p=0.038
SO224h	lag2	1.0072 (0.8499 to 1.1936), p=0.93	0.7745 (0.5939 to 1.0100), p=0.059	1.0773 (0.8155 to 1.4233), p=0.60	1.1474 (0.9785 to 1.3455), p=0.090	0.9007 (0.6366 to 1.2745), p=0.55	0.8416 (0.6589 to 1.0749), p=0.17	0.9714 (0.8444 to 1.1174), p=0.68

Table 4.4. Air pollution and health outcomes, SO2 (Port Pirie excluded) with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day time reliever use for symptoms	Day time preventer use for symptoms	Any day time medication use for symptoms
SO2 1hr				
SO21hr	lag0	1.0154 (0.9661 to 1.0673), p=0.55	1.0256 (0.9538 to 1.1029), p=0.49	1.0133 (0.9655 to 1.0636), p=0.59
SO21hr	lag1	1.0312 (0.9813 to 1.0837), p=0.22	1.0792 (1.0057 to 1.1581), p=0.034	1.0366 (0.9877 to 1.0879), p=0.14
SO21hr	lag2	1.0283 (0.9766 to 1.0827), p=0.29	1.0382 (0.9607 to 1.1220), p=0.34	1.0203 (0.9696 to 1.0735), p=0.44
SO2 24hr				
SO224h	lag0	1.0602 (0.8468 to 1.3274), p=0.61	1.0686 (0.7697 to 1.4836), p=0.69	1.0622 (0.8531 to 1.3225), p=0.59
SO224h	lag1	1.0977 (0.8741 to 1.3786), p=0.42	1.2795 (0.9223 to 1.7751), p=0.14	1.1418 (0.9143 to 1.4259), p=0.24
SO224h	lag2	1.0278 (0.8115 to 1.3017), p=0.82	0.9953 (0.7033 to 1.4084), p=0.98	0.9925 (0.7860 to 1.2532), p=0.95

5. SO_2: Two Pollutant Models with PM_{10}

Table 5.1. Air pollution and health outcomes, SO2 with PM10 and interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Evening PEF	Evening FEV1	Morning PEF	Morning FEV1
SO21hr	lag0	0.2929 (-0.0282 to 0.6140), p=0.074	0.0012 (-0.0010 to 0.0034), p=0.28		
SO21hr	lag1	-0.0408 (-0.3117 to 0.2301), p=0.77	0.0006 (-0.0013 to 0.0024), p=0.53	0.0257 (-0.1738 to 0.2252), p=0.80	0.0002 (-0.0012 to 0.0015), p=0.83
SO21hr	lag2	-0.0282 (-0.2986 to 0.2423), p=0.84	-0.0013 (-0.0031 to 0.0006), p=0.19	-0.0263 (-0.2469 to 0.1942), p=0.81	-0.0011 (-0.0026 to 0.0004), p=0.14
SO21hr	lag3			-0.1879 (-0.3893 to 0.0134), p=0.067	-0.0011 (-0.0024 to 0.0003), p=0.12
SO224h	lag0	1.6946 (0.1918 to 3.1973), p=0.027	0.0057 (-0.0046 to 0.0161), p=0.28		
SO224h	lag1	-0.7056 (-2.2275 to 0.8163), p=0.36	0.0050 (-0.0054 to 0.0154), p=0.34	-0.7361 (-1.8649 to 0.3926), p=0.20	-0.0051 (-0.0127 to 0.0025), p=0.18
SO224h	lag2	0.1860 (-1.2380 to 1.6100), p=0.80	-0.0023 (-0.0121 to 0.0075), p=0.64	0.5679 (-0.5765 to 1.7123), p=0.33	0.0022 (-0.0056 to 0.0100), p=0.57
SO224h	lag3			-0.8858 (-2.0003 to 0.2287), p=0.12	-0.0051 (-0.0126 to 0.0024), p=0.18

Table 5.2. Air pollution and health outcomes, SO2 with PM10 and interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Night cough	Night wheeze	Night shortness of breath	Any night symptoms	Any night reliever medications use
SO2 1hr						
SO21hr	lag1	1.0031 (0.9890 to 1.0174), p=0.67	1.0038 (0.9807 to 1.0274), p=0.75	0.9839 (0.9109 to 1.0627), p=0.68	1.0043 (0.9911 to 1.0176), p=0.53	1.0247 (1.0021 to 1.0478), p=0.032
SO21hr	lag2	0.9894 (0.9728 to 1.0061), p=0.21	1.0109 (0.9854 to 1.0371), p=0.41	0.9956 (0.9508 to 1.0426), p=0.85	0.9980 (0.9831 to 1.0130), p=0.79	1.0237 (1.0027 to 1.0453), p=0.027
SO21hr	lag3	1.0035 (0.9913 to 1.0159), p=0.57	1.0061 (0.9836 to 1.0290), p=0.60	0.9624 (0.8912 to 1.0393), p=0.33	1.0043 (0.9924 to 1.0163), p=0.48	0.9947 (0.9681 to 1.0220), p=0.70
SO2 24hr						
SO224h	lag1	0.9575 (0.8802 to 1.0415), p=0.31	0.9869 (0.8635 to 1.1278), p=0.85	0.8515 (0.6110 to 1.1866), p=0.34	0.9694 (0.8967 to 1.0480), p=0.43	1.0990 (0.9583 to 1.2604), p=0.18
SO224h	lag2	0.9232 (0.8468 to 1.0065), p=0.070	1.0045 (0.8726 to 1.1564), p=0.95	0.8943 (0.6734 to 1.1877), p=0.44	0.9606 (0.8880 to 1.0391), p=0.32	1.0742 (0.9452 to 1.2208), p=0.27
SO224h	lag3	1.0093 (0.9435 to 1.0797), p=0.79	0.9434 (0.8040 to 1.1070), p=0.48	0.6138 (0.4186 to 0.9000), p=0.012	1.0071 (0.9430 to 1.0756), p=0.83	0.9099 (0.7890 to 1.0494), p=0.19

Table 5.3. Air pollution and health outcomes, SO2 with PM10 and interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day cough	Day wheeze	Day shortness of breath	Day runny nose	Day eye irritation	Day fever	Any day symptoms
SO2 1hr								
SO21hr	lag0	0.9979 (0.9856 to 1.0104), p=0.74	0.9674 (0.9236 to 1.0132), p=0.16	0.9847 (0.9426 to 1.0288), p=0.49	1.0071 (0.9933 to 1.0210), p=0.32	0.9847 (0.9446 to 1.0266), p=0.47	0.9997 (0.9749 to 1.0251), p=0.98	1.0026 (0.9929 to 1.0125), p=0.60
SO21hr	lag1	1.0019 (0.9894 to 1.0146), p=0.76	0.9798 (0.9406 to 1.0207), p=0.33	0.9960 (0.9583 to 1.0352), p=0.84	1.0117 (0.9998 to 1.0238), p=0.054	1.0054 (0.9750 to 1.0367), p=0.73	1.0046 (0.9863 to 1.0233), p=0.62	1.0064 (0.9965 to 1.0164), p=0.20
SO21hr	lag2	0.9974 (0.9846 to 1.0104), p=0.70	0.9531 (0.9085 to 0.9999), p=0.049	0.9808 (0.9404 to 1.0229), p=0.37	1.0061 (0.9926 to 1.0198), p=0.37	0.9768 (0.9254 to 1.0311), p=0.40	0.9859 (0.9618 to 1.0107), p=0.26	0.9984 (0.9875 to 1.0093), p=0.77
SO2 24hr								
SO224h	lag0	0.9905 (0.9247 to 1.0610), p=0.79	0.8314 (0.6833 to 1.0116), p=0.065	0.9515 (0.7846 to 1.1538), p=0.61	1.0352 (0.9587 to 1.1177), p=0.38	0.9724 (0.8243 to 1.1471), p=0.74	0.9166 (0.7852 to 1.0700), p=0.27	1.0145 (0.9581 to 1.0743), p=0.62
SO224h	lag1	0.9580 (0.8904 to 1.0308), p=0.25	0.8131 (0.6681 to 0.9896), p=0.039	0.9332 (0.7625 to 1.1421), p=0.50	1.0434 (0.9686 to 1.1240), p=0.26	0.9731 (0.8213 to 1.1530), p=0.75	1.0067 (0.8991 to 1.1272), p=0.91	0.9900 (0.9319 to 1.0517), p=0.74
SO224h	lag2	0.9984 (0.9358 to 1.0652), p=0.96	0.7317 (0.5829 to 0.9186), p=0.007	0.9127 (0.7592 to 1.0973), p=0.33	1.0463 (0.9730 to 1.1251), p=0.22	0.9396 (0.7610 to 1.1601), p=0.56	0.8811 (0.7705 to 1.0076), p=0.064	0.9951 (0.9400 to 1.0534), p=0.87

Table 5.4. Air pollution and health outcomes, SO2 with PM10 and interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day time reliever use for symptoms	Day time preventer use for symptoms	Any day time medication use for symptoms
SO2 1hr				
SO21hr	lag0	0.9791 (0.9362 to 1.0241), p=0.36	0.9936 (0.9608 to 1.0276), p=0.71	0.9854 (0.9577 to 1.0140), p=0.31
SO21hr	lag1	1.0074 (0.9813 to 1.0343), p=0.58	1.0095 (0.9805 to 1.0395), p=0.52	1.0139 (0.9941 to 1.0341), p=0.17
SO21hr	lag2	0.9912 (0.9621 to 1.0213), p=0.56	0.9950 (0.9643 to 1.0267), p=0.75	0.9994 (0.9748 to 1.0246), p=0.96
SO2 24hr				
SO224h	lag0	0.9141 (0.7824 to 1.0679), p=0.26	0.9901 (0.8301 to 1.1810), p=0.91	0.9432 (0.8260 to 1.0770), p=0.39
SO224h	lag1	0.9859 (0.8576 to 1.1333), p=0.84	1.0009 (0.8529 to 1.1744), p=0.99	1.0038 (0.8932 to 1.1280), p=0.95
SO224h	lag2	0.8813 (0.7428 to 1.0455), p=0.15	0.9213 (0.7732 to 1.0978), p=0.36	0.9301 (0.8198 to 1.0552), p=0.26

6. NO_2: Two Pollutant Models with Ozone

Table 6.1. Air pollution and health outcomes, NO2 and 1hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Evening PEF	Evening FEV1	Morning PEF	Morning FEV1
NO2 1hr					
NO21hr	lag0	0.0614 (-0.3823 to 0.5051), p=0.79	-0.0002 (-0.0032 to 0.0027), p=0.89		
NO21hr	lag1	0.1370 (-0.3030 to 0.5769), p=0.54	0.0013 (-0.0016 to 0.0042), p=0.38	0.2729 (-0.0492 to 0.5951), p=0.097	0.0022 (-0.0000 to 0.0045), p=0.050
NO21hr	lag2	0.0327 (-0.4360 to 0.5013), p=0.89	-0.0002 (-0.0033 to 0.0030), p=0.92	-0.4042 (-0.7318 to -0.0767), p=0.016	-0.0025 (-0.0047 to -0.0002), p=0.031
NO21hr	lag3			0.3025 (-0.0521 to 0.6571), p=0.094	0.0007 (-0.0017 to 0.0032), p=0.56
NO2 24 hr					
NO224h	lag0	0.3493 (-0.6369 to 1.3355), p=0.49	0.0007 (-0.0058 to 0.0073), p=0.83		
NO224h	lag1	0.2638 (-0.7250 to 1.2526), p=0.60	0.0035 (-0.0031 to 0.0101), p=0.30	0.0434 (-0.6808 to 0.7677), p=0.91	-0.0016 (-0.0066 to 0.0034), p=0.53
NO224h	lag2	0.2870 (-0.6955 to 1.2694), p=0.57	0.0006 (-0.0060 to 0.0073), p=0.85	-0.3414 (-1.0614 to 0.3786), p=0.35	-0.0027 (-0.0077 to 0.0022), p=0.28
NO224h	lag3			-0.1246 (-0.8626 to 0.6134), p=0.74	-0.0031 (-0.0082 to 0.0020), p=0.24

Table 6.2. Air pollution and health outcomes, NO2 and 1hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Night cough	Night wheeze	Night shortness of breath	Any night symptoms	Any night reliever medications use
NO2 1hr						
NO21hr	lag1	1.0020 (0.9801 to 1.0244), p=0.86	1.0107 (0.9798 to 1.0426), p=0.50	0.9928 (0.9440 to 1.0441), p=0.78	1.0049 (0.9849 to 1.0254), p=0.63	0.9988 (0.9637 to 1.0350), p=0.95
NO21hr	lag2	1.0141 (0.9926 to 1.0361), p=0.20	1.0120 (0.9815 to 1.0435), p=0.45	0.9642 (0.9166 to 1.0142), p=0.16	1.0112 (0.9915 to 1.0312), p=0.27	0.9920 (0.9580 to 1.0272), p=0.65
NO21hr	lag3	1.0121 (0.9905 to 1.0342), p=0.28	1.0104 (0.9785 to 1.0434), p=0.53	0.9772 (0.9278 to 1.0292), p=0.38	1.0115 (0.9915 to 1.0320), p=0.26	1.0061 (0.9715 to 1.0419), p=0.73
NO2 24h						
NO224h	lag1	1.0146 (0.9705 to 1.0608), p=0.52	1.0634 (0.9990 to 1.1319), p=0.054	1.0011 (0.9112 to 1.0999), p=0.98	1.0100 (0.9690 to 1.0526), p=0.64	1.0137 (0.9459 to 1.0864), p=0.70
NO224h	lag2	1.0326 (0.9882 to 1.0790), p=0.15	1.0369 (0.9746 to 1.1032), p=0.25	0.9828 (0.8944 to 1.0798), p=0.72	1.0254 (0.9846 to 1.0678), p=0.23	1.0084 (0.9417 to 1.0798), p=0.81
NO224h	lag3	1.0447 (1.0015 to 1.0898), p=0.042	1.0409 (0.9805 to 1.1051), p=0.19	0.9494 (0.8657 to 1.0412), p=0.27	1.0301 (0.9906 to 1.0712), p=0.14	1.0203 (0.9541 to 1.0911), p=0.56

Table 6.3. Air pollution and health outcomes, NO2 and 1hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day cough	Day wheeze	Day shortness of breath	Day runny nose	Day eye irritation	Day fever	Any day symptoms
NO2 1hr								
NO21hr	lag0	1.0046 (0.9851 to 1.0246), p=0.64	1.0155 (0.9872 to 1.0445), p=0.29	1.0161 (0.9817 to 1.0517), p=0.36	0.9896 (0.9699 to 1.0096), p=0.31	0.9833 (0.9526 to 1.0149), p=0.30	0.9888 (0.9595 to 1.0189), p=0.46	0.9942 (0.9778 to 1.0108), p=0.49
NO21hr	lag1	1.0037 (0.9853 to 1.0225), p=0.69	1.0070 (0.9799 to 1.0347), p=0.62	1.0138 (0.9804 to 1.0483), p=0.42	0.9950 (0.9763 to 1.0141), p=0.61	0.9804 (0.9516 to 1.0102), p=0.19	0.9798 (0.9523 to 1.0081), p=0.16	0.9920 (0.9765 to 1.0078), p=0.32
NO21hr	lag2	1.0048 (0.9859 to 1.0241), p=0.62	0.9917 (0.9647 to 1.0194), p=0.55	0.9835 (0.9514 to 1.0167), p=0.33	0.9822 (0.9635 to 1.0013), p=0.068	0.9832 (0.9540 to 1.0133), p=0.27	0.9769 (0.9488 to 1.0059), p=0.12	0.9921 (0.9762 to 1.0082), p=0.34
NO2 24hr								
NO224h	lag0	1.0216 (0.9811 to 1.0638), p=0.30	1.0722 (1.0130 to 1.1348), p=0.016	1.0434 (0.9762 to 1.1152), p=0.21	0.9929 (0.9518 to 1.0358), p=0.74	0.9731 (0.9076 to 1.0432), p=0.44	0.9719 (0.9137 to 1.0338), p=0.37	1.0033 (0.9688 to 1.0391), p=0.85
NO224h	lag1	1.0128 (0.9737 to 1.0535), p=0.53	1.0360 (0.9807 to 1.0944), p=0.21	1.0245 (0.9608 to 1.0925), p=0.46	0.9913 (0.9516 to 1.0326), p=0.67	0.9467 (0.8835 to 1.0144), p=0.12	0.9545 (0.8987 to 1.0137), p=0.13	0.9908 (0.9579 to 1.0249), p=0.59
NO224h	lag2	1.0191 (0.9807 to 1.0589), p=0.34	0.9961 (0.9448 to 1.0501), p=0.88	1.0200 (0.9585 to 1.0856), p=0.53	0.9764 (0.9385 to 1.0158), p=0.24	0.9597 (0.8982 to 1.0254), p=0.22	0.9661 (0.9114 to 1.0241), p=0.25	0.9916 (0.9594 to 1.0248), p=0.62

Table 6.4. Air pollution and health outcomes, NO2 and 1hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day time reliever use for symptoms	Day time preventer use for symptoms	Any day time medication use for symptoms
NO2 1hr				
NO21hr	lag0	1.0057 (0.9761 to 1.0363), p=0.71	0.9720 (0.9286 to 1.0174), p=0.22	1.0000 (0.9722 to 1.0286), p=1.00
NO21hr	lag1	1.0071 (0.9787 to 1.0363), p=0.63	0.9877 (0.9463 to 1.0310), p=0.57	1.0052 (0.9782 to 1.0329), p=0.71
NO21hr	lag2	0.9924 (0.9643 to 1.0213), p=0.60	0.9732 (0.9310 to 1.0174), p=0.23	0.9944 (0.9677 to 1.0218), p=0.69
NO2 24hr				
NO224h	lag0	1.0448 (0.9842 to 1.1090), p=0.15	0.9640 (0.8805 to 1.0554), p=0.43	1.0356 (0.9778 to 1.0968), p=0.23
NO224h	lag1	1.0330 (0.9752 to 1.0943), p=0.27	1.0174 (0.9335 to 1.1090), p=0.69	1.0315 (0.9761 to 1.0901), p=0.27
NO224h	lag2	1.0282 (0.9725 to 1.0871), p=0.33	1.0067 (0.9238 to 1.0972), p=0.88	1.0350 (0.9812 to 1.0918), p=0.21

Table 6.5. Air pollution and health outcomes, NO2 and 4hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Evening PEF	Evening FEV1	Morning PEF	Morning FEV1
NO2 1hr					
NO21hr	lag0	0.0639 (-0.3788 to 0.5066), p=0.78	-0.0002 (-0.0031 to 0.0028), p=0.90		
NO21hr	lag1	0.1481 (-0.2911 to 0.5873), p=0.51	0.0014 (-0.0016 to 0.0043), p=0.36	0.2795 (-0.0421 to 0.6011), p=0.088	0.0023 (0.0000 to 0.0045), p=0.048
NO21hr	lag2	0.0275 (-0.4410 to 0.4959), p=0.91	-0.0002 (-0.0034 to 0.0030), p=0.90	-0.3963 (-0.7236 to -0.0690), p=0.018	-0.0025 (-0.0047 to -0.0002), p=0.032
NO21hr	lag3			0.2962 (-0.0585 to 0.6509), p=0.10	0.0007 (-0.0018 to 0.0032), p=0.57
NO2 24 hr					
NO224h	lag0	0.3326 (-0.6544 to 1.3197), p=0.51	0.0006 (-0.0059 to 0.0072), p=0.85		
NO224h	lag1	0.2695 (-0.7189 to 1.2579), p=0.59	0.0035 (-0.0030 to 0.0101), p=0.29	0.0538 (-0.6714 to 0.7791), p=0.88	-0.0015 (-0.0066 to 0.0035), p=0.55
NO224h	lag2	0.2753 (-0.7067 to 1.2573), p=0.58	0.0005 (-0.0061 to 0.0072), p=0.87	-0.3356 (-1.0556 to 0.3844), p=0.36	-0.0027 (-0.0077 to 0.0023), p=0.28
NO224h	lag3			-0.1388 (-0.8768 to 0.5992), p=0.71	-0.0031 (-0.0082 to 0.0020), p=0.23

Table 6.6. Air pollution and health outcomes, NO2 and 4hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Night cough	Night wheeze	Night shortness of breath	Any night symptoms	Any night reliever medications use
NO2 1hr						
NO21hr	lag1	1.0014 (0.9796 to 1.0237), p=0.90	1.0110 (0.9803 to 1.0427), p=0.49	0.9914 (0.9429 to 1.0423), p=0.73	1.0046 (0.9847 to 1.0250), p=0.65	0.9985 (0.9637 to 1.0345), p=0.93
NO21hr	lag2	1.0138 (0.9924 to 1.0357), p=0.21	1.0127 (0.9821 to 1.0442), p=0.42	0.9647 (0.9170 to 1.0148), p=0.16	1.0111 (0.9915 to 1.0311), p=0.27	0.9920 (0.9581 to 1.0272), p=0.65
NO21hr	lag3	1.0121 (0.9905 to 1.0342), p=0.28	1.0108 (0.9789 to 1.0439), p=0.51	0.9778 (0.9283 to 1.0300), p=0.40	1.0116 (0.9916 to 1.0320), p=0.26	1.0062 (0.9716 to 1.0420), p=0.73
NO2 24hr						
NO224h	lag1	1.0134 (0.9693 to 1.0596), p=0.56	1.0605 (0.9964 to 1.1288), p=0.065	0.9950 (0.9054 to 1.0935), p=0.92	1.0086 (0.9678 to 1.0512), p=0.68	1.0122 (0.9446 to 1.0846), p=0.73
NO224h	lag2	1.0321 (0.9878 to 1.0785), p=0.16	1.0361 (0.9737 to 1.1025), p=0.26	0.9814 (0.8930 to 1.0785), p=0.70	1.0250 (0.9842 to 1.0674), p=0.23	1.0079 (0.9413 to 1.0793), p=0.82
NO224h	lag3	1.0447 (1.0015 to 1.0898), p=0.042	1.0400 (0.9796 to 1.1042), p=0.20	0.9483 (0.8647 to 1.0401), p=0.26	1.0300 (0.9904 to 1.0710), p=0.14	1.0203 (0.9541 to 1.0910), p=0.56

Table 6.7. Air pollution and health outcomes, NO2 and 4hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day cough	Day wheeze	Day shortness of breath	Day runny nose	Day eye irritation	Day fever	Any day symptoms
NO2 1hr								
NO21hr	lag0	1.0044 (0.9849 to 1.0242), p=0.66	1.0158 (0.9877 to 1.0447), p=0.27	1.0166 (0.9824 to 1.0520), p=0.34	0.9898 (0.9702 to 1.0098), p=0.32	0.9821 (0.9516 to 1.0136), p=0.26	0.9877 (0.9586 to 1.0177), p=0.42	0.9941 (0.9778 to 1.0106), p=0.48
NO21hr	lag1	1.0037 (0.9853 to 1.0225), p=0.69	1.0075 (0.9804 to 1.0352), p=0.59	1.0142 (0.9809 to 1.0486), p=0.41	0.9952 (0.9765 to 1.0142), p=0.62	0.9796 (0.9508 to 1.0093), p=0.18	0.9791 (0.9517 to 1.0074), p=0.15	0.9921 (0.9766 to 1.0078), p=0.32
NO21hr	lag2	1.0049 (0.9860 to 1.0242), p=0.61	0.9919 (0.9649 to 1.0197), p=0.56	0.9836 (0.9515 to 1.0168), p=0.33	0.9822 (0.9635 to 1.0013), p=0.068	0.9833 (0.9541 to 1.0134), p=0.27	0.9771 (0.9490 to 1.0061), p=0.12	0.9922 (0.9763 to 1.0083), p=0.34
NO2 24hr								
NO224h	lag0	1.0202 (0.9797 to 1.0623), p=0.33	1.0720 (1.0129 to 1.1345), p=0.016	1.0439 (0.9767 to 1.1157), p=0.21	0.9926 (0.9515 to 1.0355), p=0.73	0.9720 (0.9067 to 1.0421), p=0.42	0.9705 (0.9122 to 1.0324), p=0.34	1.0026 (0.9681 to 1.0383), p=0.89
NO224h	lag1	1.0125 (0.9734 to 1.0531), p=0.54	1.0362 (0.9809 to 1.0945), p=0.20	1.0249 (0.9611 to 1.0929), p=0.45	0.9913 (0.9517 to 1.0326), p=0.67	0.9461 (0.8830 to 1.0138), p=0.12	0.9541 (0.8984 to 1.0133), p=0.13	0.9908 (0.9578 to 1.0249), p=0.59
NO224h	lag2	1.0191 (0.9807 to 1.0590), p=0.33	0.9959 (0.9446 to 1.0500), p=0.88	1.0201 (0.9584 to 1.0856), p=0.53	0.9762 (0.9383 to 1.0156), p=0.23	0.9603 (0.8988 to 1.0260), p=0.23	0.9666 (0.9119 to 1.0245), p=0.25	0.9916 (0.9594 to 1.0248), p=0.62

Table 6.8. Air pollution and health outcomes, NO2 and 4hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day time reliever use for symptoms	Day time preventer use for symptoms	Any day time medication use for symptoms
NO2 1hr				
NO21hr	lag0	1.0051 (0.9757 to 1.0354), p=0.74	0.9724 (0.9292 to 1.0175), p=0.23	0.9996 (0.9720 to 1.0280), p=0.98
NO21hr	lag1	1.0069 (0.9785 to 1.0360), p=0.64	0.9875 (0.9461 to 1.0307), p=0.57	1.0050 (0.9781 to 1.0327), p=0.72
NO21hr	lag2	0.9924 (0.9643 to 1.0213), p=0.60	0.9727 (0.9304 to 1.0169), p=0.22	0.9944 (0.9677 to 1.0218), p=0.68
NO2 24hr				
NO224h	lag0	1.0432 (0.9829 to 1.1073), p=0.16	0.9664 (0.8829 to 1.0578), p=0.46	1.0347 (0.9770 to 1.0958), p=0.24
NO224h	lag1	1.0327 (0.9749 to 1.0939), p=0.27	1.0182 (0.9342 to 1.1098), p=0.68	1.0313 (0.9759 to 1.0898), p=0.27
NO224h	lag2	1.0282 (0.9726 to 1.0871), p=0.33	1.0067 (0.9237 to 1.0972), p=0.88	1.0351 (0.9812 to 1.0918), p=0.21

Table 6.9. Air pollution and health outcomes, NO2 and 8hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Evening PEF	Evening FEV1	Morning PEF	Morning FEV1
NO2 1hr					
NO21hr	lag0	0.0534 (-0.3885 to 0.4952), p=0.81	-0.0002 (-0.0032 to 0.0027), p=0.87		
NO21hr	lag1	0.1247 (-0.3144 to 0.5638), p=0.58	0.0012 (-0.0017 to 0.0041), p=0.43	0.2831 (-0.0380 to 0.6042), p=0.084	0.0023 (0.0001 to 0.0045), p=0.045
NO21hr	lag2	-0.0133 (-0.4876 to 0.4610), p=0.96	-0.0003 (-0.0034 to 0.0029), p=0.87	-0.3986 (-0.7269 to -0.0702), p=0.017	-0.0024 (-0.0047 to -0.0002), p=0.033
NO21hr	lag3			0.3112 (-0.0439 to 0.6663), p=0.086	0.0007 (-0.0018 to 0.0031), p=0.59
NO2 24 hr					
NO224h	lag0	0.1645 (-0.8381 to 1.1671), p=0.75	0.0001 (-0.0065 to 0.0067), p=0.98		
NO224h	lag1	0.1651 (-0.8363 to 1.1666), p=0.75	0.0034 (-0.0032 to 0.0100), p=0.31	0.1216 (-0.6110 to 0.8543), p=0.74	-0.0013 (-0.0064 to 0.0037), p=0.61
NO224h	lag2	0.1322 (-0.8630 to 1.1273), p=0.79	0.0001 (-0.0066 to 0.0068), p=0.97	-0.3357 (-1.0620 to 0.3905), p=0.36	-0.0026 (-0.0076 to 0.0024), p=0.31
NO224h	lag3			-0.1235 (-0.8672 to 0.6201), p=0.74	-0.0031 (-0.0082 to 0.0020), p=0.23

Table 6.10. Air pollution and health outcomes, NO2 and 8hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Night cough	Night wheeze	Night shortness of breath	Any night symptoms	Any night reliever medications use
NO2 1hr						
NO21hr	lag1	1.0011 (0.9794 to 1.0232), p=0.92	1.0115 (0.9808 to 1.0431), p=0.47	0.9882 (0.9401 to 1.0388), p=0.64	1.0043 (0.9845 to 1.0246), p=0.67	0.9990 (0.9644 to 1.0348), p=0.96
NO21hr	lag2	1.0141 (0.9927 to 1.0359), p=0.20	1.0140 (0.9834 to 1.0455), p=0.38	0.9642 (0.9166 to 1.0142), p=0.16	1.0115 (0.9920 to 1.0315), p=0.25	0.9932 (0.9591 to 1.0284), p=0.70
NO21hr	lag3	1.0131 (0.9916 to 1.0352), p=0.23	1.0131 (0.9810 to 1.0461), p=0.43	0.9727 (0.9245 to 1.0234), p=0.29	1.0114 (0.9915 to 1.0317), p=0.26	1.0070 (0.9724 to 1.0428), p=0.70
NO2 24hr						
NO224h	lag1	1.0134 (0.9692 to 1.0596), p=0.56	1.0519 (0.9881 to 1.1197), p=0.11	0.9772 (0.8888 to 1.0743), p=0.63	1.0054 (0.9647 to 1.0479), p=0.80	1.0106 (0.9430 to 1.0830), p=0.77
NO224h	lag2	1.0327 (0.9884 to 1.0791), p=0.15	1.0312 (0.9692 to 1.0973), p=0.33	0.9723 (0.8853 to 1.0678), p=0.56	1.0235 (0.9829 to 1.0657), p=0.26	1.0078 (0.9411 to 1.0792), p=0.82
NO224h	lag3	1.0455 (1.0022 to 1.0905), p=0.039	1.0378 (0.9774 to 1.1019), p=0.22	0.9434 (0.8609 to 1.0338), p=0.21	1.0289 (0.9895 to 1.0698), p=0.15	1.0208 (0.9545 to 1.0917), p=0.55

Table 6.11. Air pollution and health outcomes, NO2 and 8hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day cough	Day wheeze	Day shortness of breath	Day runny nose	Day eye irritation	Day fever	Any day symptoms
NO2 1hr								
NO21hr	lag0	1.0035 (0.9842 to 1.0233), p=0.72	1.0161 (0.9882 to 1.0449), p=0.26	1.0167 (0.9827 to 1.0519), p=0.34	0.9891 (0.9696 to 1.0089), p=0.28	0.9817 (0.9514 to 1.0131), p=0.25	0.9869 (0.9579 to 1.0167), p=0.39	0.9934 (0.9772 to 1.0098), p=0.43
NO21hr	lag1	1.0034 (0.9851 to 1.0221), p=0.72	1.0086 (0.9816 to 1.0363), p=0.54	1.0147 (0.9814 to 1.0491), p=0.39	0.9950 (0.9763 to 1.0139), p=0.60	0.9793 (0.9505 to 1.0090), p=0.17	0.9791 (0.9516 to 1.0073), p=0.14	0.9920 (0.9766 to 1.0077), p=0.32
NO21hr	lag2	1.0048 (0.9861 to 1.0240), p=0.62	0.9930 (0.9659 to 1.0208), p=0.62	0.9845 (0.9524 to 1.0178), p=0.36	0.9835 (0.9648 to 1.0026), p=0.090	0.9834 (0.9542 to 1.0135), p=0.28	0.9781 (0.9500 to 1.0071), p=0.14	0.9928 (0.9770 to 1.0088), p=0.38
NO2 24hr								
NO224h	lag0	1.0177 (0.9774 to 1.0597), p=0.39	1.0729 (1.0137 to 1.1354), p=0.015	1.0411 (0.9742 to 1.1125), p=0.23	0.9943 (0.9532 to 1.0373), p=0.79	0.9729 (0.9075 to 1.0430), p=0.44	0.9680 (0.9098 to 1.0300), p=0.30	1.0019 (0.9675 to 1.0376), p=0.91
NO224h	lag1	1.0113 (0.9723 to 1.0518), p=0.58	1.0375 (0.9822 to 1.0959), p=0.19	1.0225 (0.9590 to 1.0903), p=0.50	0.9920 (0.9524 to 1.0332), p=0.70	0.9465 (0.8833 to 1.0143), p=0.12	0.9526 (0.8970 to 1.0116), p=0.11	0.9905 (0.9577 to 1.0244), p=0.58
NO224h	lag2	1.0189 (0.9806 to 1.0586), p=0.34	0.9965 (0.9451 to 1.0506), p=0.90	1.0191 (0.9576 to 1.0845), p=0.55	0.9773 (0.9395 to 1.0167), p=0.26	0.9607 (0.8992 to 1.0265), p=0.24	0.9669 (0.9123 to 1.0247), p=0.26	0.9921 (0.9600 to 1.0252), p=0.64

Table 6.12. Air pollution and health outcomes, NO2 and 8hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day time reliever use for symptoms	Day time preventer use for symptoms	Any day time medication use for symptoms
NO2 1hr				
NO21hr	lag0	1.0049 (0.9757 to 1.0350), p=0.74	0.9737 (0.9308 to 1.0186), p=0.25	0.9998 (0.9723 to 1.0280), p=0.99
NO21hr	lag1	1.0064 (0.9782 to 1.0354), p=0.66	0.9871 (0.9463 to 1.0296), p=0.54	1.0049 (0.9781 to 1.0324), p=0.72
NO21hr	lag2	0.9909 (0.9631 to 1.0196), p=0.53	0.9701 (0.9289 to 1.0131), p=0.17	0.9934 (0.9669 to 1.0206), p=0.63
NO2 24hr				
NO224h	lag0	1.0406 (0.9805 to 1.1043), p=0.19	0.9687 (0.8858 to 1.0595), p=0.49	1.0335 (0.9760 to 1.0943), p=0.26
NO224h	lag1	1.0319 (0.9744 to 1.0929), p=0.28	1.0209 (0.9373 to 1.1119), p=0.63	1.0314 (0.9762 to 1.0898), p=0.27
NO224h	lag2	1.0276 (0.9721 to 1.0863), p=0.34	1.0073 (0.9250 to 1.0968), p=0.87	1.0350 (0.9813 to 1.0916), p=0.21

7. NO_2: Homes with Unflued Gas Heater Models

Table 7.1. Air pollution and health outcomes, NO2 and unflued gas heaters with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Evening PEF	Evening FEV1	Morning PEF	Morning FEV1
NO21hr	lag0	-0.6089 (-1.7861 to 0.5683), p=0.31	-0.0041 (-0.0122 to 0.0040), p=0.32		
NO21hr	lag1	-0.6411 (-1.8515 to 0.5693), p=0.30	0.0001 (-0.0081 to 0.0082), p=0.98	0.0833 (-0.6371 to 0.8038), p=0.82	0.0016 (-0.0037 to 0.0069), p=0.55
NO21hr	lag2	0.0350 (-1.2237 to 1.2937), p=0.96	0.0017 (-0.0067 to 0.0101), p=0.70	-1.0481 (-1.8306 to -0.2655), p=0.009	-0.0046 (-0.0105 to 0.0013), p=0.12
NO21hr	lag3			-0.4617 (-1.2757 to 0.3524), p=0.27	-0.0017 (-0.0079 to 0.0045), p=0.59
NO224h	lag0	-0.3496 (-2.5388 to 1.8397), p=0.75	-0.0033 (-0.0179 to 0.0114), p=0.66		
NO224h	lag1	-1.9496 (-4.2067 to 0.3074), p=0.090	-0.0073 (-0.0223 to 0.0076), p=0.34	0.3852 (-1.0634 to 1.8337), p=0.60	0.0035 (-0.0071 to 0.0141), p=0.52
NO224h	lag2	0.0713 (-2.3798 to 2.5224), p=0.95	-0.0020 (-0.0180 to 0.0140), p=0.81	-1.1664 (-2.6869 to 0.3542), p=0.13	-0.0091 (-0.0204 to 0.0022), p=0.12
NO224h	lag3			-0.5003 (-2.0914 to 1.0908), p=0.54	-0.0013 (-0.0132 to 0.0107), p=0.83

Table 7.2. Air pollution and health outcomes, NO2 and unflued gas heaters with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Night cough	Night wheeze	Night shortness of breath	Any night symptoms	Any night reliever medications use
NO2 1hr						
NO21hr	lag1	1.0056 (0.9538 to 1.0601), p=0.84	1.0724 (0.9939 to 1.1571), p=0.072	1.1189 (0.9586 to 1.3060), p=0.15	1.0071 (0.9587 to 1.0579), p=0.78	1.1016 (1.0204 to 1.1893), p=0.013
NO21hr	lag2	1.0555 (1.0014 to 1.1126), p=0.044	1.0081 (0.9341 to 1.0879), p=0.84	1.0911 (0.9341 to 1.2744), p=0.27	1.0248 (0.9768 to 1.0752), p=0.32	1.0378 (0.9616 to 1.1200), p=0.34
NO21hr	lag3	1.0752 (1.0190 to 1.1345), p=0.008	1.0269 (0.9539 to 1.1055), p=0.48	1.0080 (0.8321 to 1.2212), p=0.93	1.0516 (1.0011 to 1.1047), p=0.045	1.0366 (0.9550 to 1.1253), p=0.39
NO2 24hr						
NO224h	lag1	1.0402 (0.9579 to 1.1296), p=0.35	1.1939 (1.0525 to 1.3545), p=0.006	1.1178 (0.8883 to 1.4066), p=0.34	1.0434 (0.9649 to 1.1282), p=0.29	1.2156 (1.0699 to 1.3811), p=0.003
NO224h	lag2	1.0787 (0.9949 to 1.1695), p=0.066	1.0907 (0.9636 to 1.2345), p=0.17	1.1103 (0.8574 to 1.4379), p=0.43	1.0467 (0.9695 to 1.1300), p=0.24	1.1289 (0.9976 to 1.2775), p=0.055
NO224h	lag3	1.1339 (1.0443 to 1.2313), p=0.003	1.0977 (0.9657 to 1.2478), p=0.15	1.0123 (0.7499 to 1.3666), p=0.94	1.1113 (1.0274 to 1.2022), p=0.009	1.1144 (0.9699 to 1.2804), p=0.13

Table 7.3. Air pollution and health outcomes, NO2 and unflued gas heaters with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day cough	Day wheeze	Day shortness of breath	Day runny nose	Day eye irritation	Day fever	Any day symptoms
NO2 1hr								
NO21hr	lag0	1.0126 (0.9641 to 1.0635), p=0.62	1.0385 (0.9783 to 1.1024), p=0.21	1.1094 (1.0218 to 1.2045), p=0.013	1.0269 (0.9710 to 1.0860), p=0.35	0.9254 (0.8155 to 1.0501), p=0.23	1.0380 (0.9621 to 1.1200), p=0.34	0.9961 (0.9537 to 1.0404), p=0.86
NO21hr	lag1	1.0080 (0.9586 to 1.0599), p=0.76	1.0610 (0.9994 to 1.1263), p=0.052	1.0978 (1.0109 to 1.1922), p=0.027	1.0335 (0.9782 to 1.0920), p=0.24	0.9555 (0.8535 to 1.0697), p=0.43	1.0224 (0.9506 to 1.0996), p=0.55	1.0015 (0.9584 to 1.0465), p=0.95
NO21hr	lag2	1.0276 (0.9774 to 1.0803), p=0.29	0.9910 (0.9328 to 1.0529), p=0.77	1.0536 (0.9719 to 1.1422), p=0.20	1.0341 (0.9788 to 1.0925), p=0.23	0.9206 (0.7962 to 1.0645), p=0.26	1.0019 (0.9286 to 1.0810), p=0.96	0.9938 (0.9498 to 1.0397), p=0.79
NO2 24hr								
NO224h	lag0	1.0523 (0.9711 to 1.1404), p=0.21	1.1134 (1.0073 to 1.2307), p=0.036	1.1653 (1.0323 to 1.3154), p=0.013	1.0730 (0.9796 to 1.1752), p=0.13	0.9887 (0.7533 to 1.2977), p=0.93	1.0447 (0.9214 to 1.1845), p=0.49	1.0294 (0.9568 to 1.1076), p=0.44
NO224h	lag1	1.0106 (0.9324 to 1.0955), p=0.80	1.1350 (1.0244 to 1.2576), p=0.016	1.1763 (1.0370 to 1.3343), p=0.012	1.0641 (0.9745 to 1.1620), p=0.17	1.0091 (0.8222 to 1.2384), p=0.93	1.0394 (0.9225 to 1.1711), p=0.53	1.0035 (0.9321 to 1.0802), p=0.93
NO224h	lag2	1.0518 (0.9692 to 1.1414), p=0.23	1.0626 (0.9621 to 1.1737), p=0.23	1.1815 (1.0346 to 1.3493), p=0.014	1.0909 (0.9972 to 1.1934), p=0.057	0.9192 (0.7386 to 1.1439), p=0.45	0.9795 (0.8661 to 1.1076), p=0.74	1.0099 (0.9373 to 1.0881), p=0.80

Table 7.4. Air pollution and health outcomes, NO2 and unflued gas heaters with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day time reliever use for symptoms	Day time preventer use for symptoms	Any day time medication use for symptoms
NO2 1hr				
NO21hr	lag0	1.0099 (0.9375 to 1.0879), p=0.80	1.0257 (0.8944 to 1.1762), p=0.72	0.9920 (0.9241 to 1.0649), p=0.82
NO21hr	lag1	1.0276 (0.9528 to 1.1083), p=0.48	1.1265 (1.0029 to 1.2654), p=0.045	1.0216 (0.9537 to 1.0943), p=0.54
NO21hr	lag2	0.9795 (0.9069 to 1.0579), p=0.60	1.0509 (0.9356 to 1.1804), p=0.40	0.9832 (0.9167 to 1.0545), p=0.63
NO2 24hr				
NO224h	lag0	1.0532 (0.9381 to 1.1825), p=0.38	1.0138 (0.8062 to 1.2748), p=0.91	1.0140 (0.9082 to 1.1321), p=0.80
NO224h	lag1	1.0735 (0.9547 to 1.2072), p=0.24	1.2068 (0.9964 to 1.4617), p=0.055	1.0822 (0.9707 to 1.2066), p=0.15
NO224h	lag2	1.0510 (0.9344 to 1.1822), p=0.41	1.0965 (0.9113 to 1.3195), p=0.33	1.0670 (0.9572 to 1.1895), p=0.24

8. PM_{10}: Two Pollutant Models with Gaseous Air Pollutants

Table 8.1. Air pollution and health outcomes, PM10 and 1hr NO2 with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Evening PEF	Evening FEV1	Morning PEF	Morning FEV1
PM1024hr	lag0	-0.0322 (-0.4865 to 0.4221), p=0.89	0.0010 (-0.0020 to 0.0040), p=0.50		
PM1024hr	lag1	-0.0569 (-0.5126 to 0.3987), p=0.81	-0.0001 (-0.0031 to 0.0030), p=0.97	0.2559 (-0.0742 to 0.5860), p=0.13	0.0019 (-0.0005 to 0.0043), p=0.11
PM1024hr	lag2	-0.0603 (-0.5152 to 0.3945), p=0.79	-0.0001 (-0.0031 to 0.0029), p=0.96	-0.1348 (-0.4815 to 0.2120), p=0.45	-0.0007 (-0.0032 to 0.0018), p=0.58
PM1024hr	lag3			-0.0427 (-0.3972 to 0.3117), p=0.81	-0.0012 (-0.0038 to 0.0013), p=0.33

Table 8.2. Air pollution and health outcomes, PM10 and 1hr NO2 with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Night cough	Night wheeze	Night shortness of breath	Any night symptoms	Any night reliever medications use
PM10 24hr						
PM1024hr	lag1	1.0164 (0.9962 to 1.0370), p=0.11	1.0267 (1.0000 to 1.0543), p=0.050	0.9948 (0.9587 to 1.0324), p=0.78	1.0127 (0.9939 to 1.0318), p=0.19	0.9987 (0.9682 to 1.0301), p=0.93
PM1024hr	lag2	1.0220 (1.0017 to 1.0428), p=0.033	1.0260 (0.9991 to 1.0536), p=0.058	1.0271 (0.9925 to 1.0629), p=0.13	1.0171 (0.9981 to 1.0364), p=0.078	0.9876 (0.9583 to 1.0179), p=0.42
PM1024hr	lag3	1.0096 (0.9897 to 1.0299), p=0.35	1.0223 (0.9963 to 1.0491), p=0.093	1.0003 (0.9648 to 1.0372), p=0.99	1.0111 (0.9927 to 1.0299), p=0.24	0.9975 (0.9685 to 1.0274), p=0.87

Table 8.3. Air pollution and health outcomes, PM10 and 1hr NO2 with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day cough	Day wheeze	Day shortness of breath	Day runny nose	Day eye irritation	Day fever	Any day symptoms
PM10 24hr								
PM1024hr	lag0	1.0097 (0.9914 to 1.0284), p=0.30	1.0288 (1.0049 to 1.0534), p=0.018	1.0089 (0.9802 to 1.0383), p=0.55	1.0073 (0.9881 to 1.0269), p=0.46	0.9930 (0.9635 to 1.0233), p=0.65	1.0065 (0.9807 to 1.0329), p=0.63	1.0042 (0.9883 to 1.0204), p=0.61
PM1024hr	lag1	1.0157 (0.9970 to 1.0347), p=0.10	1.0091 (0.9856 to 1.0331), p=0.45	1.0193 (0.9911 to 1.0482), p=0.18	0.9969 (0.9777 to 1.0165), p=0.76	1.0153 (0.9862 to 1.0453), p=0.31	1.0062 (0.9804 to 1.0326), p=0.64	1.0110 (0.9949 to 1.0273), p=0.18
PM1024hr	lag2	1.0227 (1.0042 to 1.0416), p=0.016	1.0115 (0.9881 to 1.0355), p=0.34	1.0231 (0.9950 to 1.0520), p=0.11	0.9897 (0.9704 to 1.0093), p=0.30	1.0121 (0.9835 to 1.0417), p=0.41	1.0083 (0.9829 to 1.0344), p=0.52	1.0071 (0.9914 to 1.0231), p=0.38

Table 8.4. Air pollution and health outcomes, PM10 and 1hr NO2 with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day time reliever use for symptoms	Day time preventer use for symptoms	Any day time medication use for symptoms
PM10 24hr				
PM1024hr	lag0	1.0067 (0.9807 to 1.0334), p=0.61	1.0138 (0.9781 to 1.0508), p=0.45	0.9971 (0.9726 to 1.0222), p=0.82
PM1024hr	lag1	1.0218 (0.9963 to 1.0479), p=0.095	1.0302 (0.9947 to 1.0670), p=0.096	1.0167 (0.9925 to 1.0415), p=0.18
PM1024hr	lag2	1.0233 (0.9974 to 1.0498), p=0.078	1.0239 (0.9882 to 1.0609), p=0.19	1.0218 (0.9973 to 1.0468), p=0.081

Table 8.5. Air pollution and health outcomes, PM10 and 24hr NO2 with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Evening PEF	Evening FEV1	Morning PEF	Morning FEV1
PM1024hr	lag0	-0.1596 (-0.6289 to 0.3096), p=0.50	0.0001 (-0.0030 to 0.0032), p=0.96		
PM1024hr	lag1	-0.1021 (-0.5604 to 0.3561), p=0.66	-0.0003 (-0.0033 to 0.0028), p=0.87	0.3079 (-0.0302 to 0.6460), p=0.074	0.0027 (0.0003 to 0.0051), p=0.030
PM1024hr	lag2	-0.1057 (-0.5638 to 0.3524), p=0.65	-0.0005 (-0.0035 to 0.0025), p=0.74	-0.1284 (-0.4756 to 0.2188), p=0.47	-0.0007 (-0.0031 to 0.0018), p=0.60
PM1024hr	lag3			-0.0208 (-0.3761 to 0.3345), p=0.91	-0.0010 (-0.0035 to 0.0015), p=0.44

Table 8.6. Air pollution and health outcomes, PM10 and 24hr NO2 with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Night cough	Night wheeze	Night shortness of breath	Any night symptoms	Any night reliever medications use
PM10 24hr						
PM1024hr	lag1	1.0160 (0.9953 to 1.0371), p=0.13	1.0181 (0.9910 to 1.0460), p=0.19	0.9774 (0.9412 to 1.0150), p=0.24	1.0104 (0.9912 to 1.0299), p=0.29	0.9870 (0.9558 to 1.0192), p=0.42
PM1024hr	lag2	1.0218 (1.0013 to 1.0426), p=0.037	1.0211 (0.9942 to 1.0487), p=0.13	1.0160 (0.9819 to 1.0513), p=0.36	1.0149 (0.9959 to 1.0342), p=0.12	0.9824 (0.9527 to 1.0130), p=0.26
PM1024hr	lag3	1.0094 (0.9895 to 1.0297), p=0.36	1.0188 (0.9929 to 1.0454), p=0.16	0.9920 (0.9571 to 1.0282), p=0.66	1.0096 (0.9912 to 1.0282), p=0.31	0.9936 (0.9646 to 1.0235), p=0.67

Table 8.7. Air pollution and health outcomes, PM10 and 24hr NO2 with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day cough	Day wheeze	Day shortness of breath	Day runny nose	Day eye irritation	Day fever	Any day symptoms
PM10 24hr								
PM1024hr	lag0	1.0086 (0.9901 to 1.0274), p=0.37	1.0243 (0.9999 to 1.0492), p=0.051	1.0049 (0.9759 to 1.0347), p=0.75	1.0068 (0.9873 to 1.0266), p=0.50	1.0007 (0.9703 to 1.0321), p=0.96	1.0095 (0.9832 to 1.0366), p=0.48	1.0021 (0.9860 to 1.0184), p=0.80
PM1024hr	lag1	1.0148 (0.9961 to 1.0337), p=0.12	1.0056 (0.9820 to 1.0297), p=0.65	1.0158 (0.9876 to 1.0448), p=0.27	0.9960 (0.9768 to 1.0155), p=0.68	1.0191 (0.9900 to 1.0491), p=0.20	1.0073 (0.9815 to 1.0337), p=0.58	1.0090 (0.9931 to 1.0253), p=0.27
PM1024hr	lag2	1.0218 (1.0034 to 1.0405), p=0.020	1.0086 (0.9853 to 1.0325), p=0.47	1.0205 (0.9926 to 1.0492), p=0.15	0.9886 (0.9695 to 1.0081), p=0.25	1.0148 (0.9861 to 1.0444), p=0.31	1.0092 (0.9840 to 1.0351), p=0.48	1.0053 (0.9897 to 1.0212), p=0.51

Table 8.8. Air pollution and health outcomes, PM10 and 24hr NO2 with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day time reliever use for symptoms	Day time preventer use for symptoms	Any day time medication use for symptoms
PM10 24hr				
PM1024hr	lag0	0.9988 (0.9724 to 1.0259), p=0.93	1.0113 (0.9754 to 1.0485), p=0.54	0.9902 (0.9653 to 1.0157), p=0.45
PM1024hr	lag1	1.0183 (0.9927 to 1.0444), p=0.16	1.0282 (0.9933 to 1.0645), p=0.11	1.0133 (0.9891 to 1.0381), p=0.28
PM1024hr	lag2	1.0202 (0.9945 to 1.0465), p=0.12	1.0222 (0.9870 to 1.0586), p=0.22	1.0183 (0.9941 to 1.0431), p=0.14

Table 8.9. Air pollution and health outcomes, PM10 and 1hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Evening PEF	Evening FEV1	Morning PEF	Morning FEV1
PM1024hr	lag0	-0.0801 (-0.4549 to 0.2947), p=0.68	-0.0001 (-0.0026 to 0.0024), p=0.95		
PM1024hr	lag1	-0.0212 (-0.4704 to 0.4280), p=0.93	-0.0003 (-0.0033 to 0.0027), p=0.84	0.1000 (-0.1915 to 0.3915), p=0.50	0.0000 (-0.0020 to 0.0020), p=0.98
PM1024hr	lag2	0.0553 (-0.3831 to 0.4938), p=0.80	0.0000 (-0.0029 to 0.0029), p=0.99	-0.3674 (-0.7291 to -0.0057), p=0.046	-0.0017 (-0.0042 to 0.0008), p=0.18
PM1024hr	lag3			0.1716 (-0.1923 to 0.5354), p=0.36	0.0013 (-0.0012 to 0.0038), p=0.32

Table 8.10. Air pollution and health outcomes, PM10 and 1hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Night cough	Night wheeze	Night shortness of breath	Any night symptoms	Any night reliever medications use
PM10 24hr						
PM1024hr	lag1	1.0012 (0.9814 to 1.0214), p=0.91	1.0184 (0.9942 to 1.0432), p=0.14	0.9905 (0.9507 to 1.0321), p=0.65	1.0000 (0.9819 to 1.0185), p=1.00	0.9958 (0.9638 to 1.0289), p=0.80
PM1024hr	lag2	1.0116 (0.9892 to 1.0345), p=0.31	1.0290 (0.9995 to 1.0594), p=0.054	1.0195 (0.9798 to 1.0609), p=0.34	1.0071 (0.9867 to 1.0280), p=0.50	0.9869 (0.9516 to 1.0235), p=0.48
PM1024hr	lag3	1.0002 (0.9779 to 1.0230), p=0.99	1.0271 (0.9991 to 1.0559), p=0.058	0.9831 (0.9396 to 1.0286), p=0.46	1.0014 (0.9815 to 1.0217), p=0.89	1.0026 (0.9685 to 1.0379), p=0.88

Table 8.11. Air pollution and health outcomes, PM10 and 1hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day cough	Day wheeze	Day shortness of breath	Day runny nose	Day eye irritation	Day fever	Any day symptoms
PM10 24hr								
PM1024hr	lag0	1.0061 (0.9891 to 1.0233), p=0.48	1.0135 (0.9920 to 1.0355), p=0.22	0.9962 (0.9672 to 1.0260), p=0.80	0.9986 (0.9798 to 1.0178), p=0.88	0.9817 (0.9533 to 1.0109), p=0.22	0.9857 (0.9603 to 1.0119), p=0.28	0.9947 (0.9799 to 1.0097), p=0.49
PM1024hr	lag1	1.0044 (0.9845 to 1.0247), p=0.67	0.9947 (0.9679 to 1.0222), p=0.70	1.0008 (0.9680 to 1.0346), p=0.96	0.9930 (0.9724 to 1.0141), p=0.51	0.9977 (0.9667 to 1.0296), p=0.88	0.9961 (0.9677 to 1.0253), p=0.79	0.9947 (0.9778 to 1.0118), p=0.54
PM1024hr	lag2	1.0154 (0.9957 to 1.0355), p=0.13	0.9927 (0.9660 to 1.0201), p=0.60	1.0075 (0.9747 to 1.0414), p=0.66	0.9867 (0.9662 to 1.0077), p=0.21	1.0010 (0.9710 to 1.0319), p=0.95	1.0091 (0.9823 to 1.0365), p=0.51	0.9957 (0.9792 to 1.0124), p=0.61

Table 8.12. Air pollution and health outcomes, PM10 and 1hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day time reliever use for symptoms	Day time preventer use for symptoms	Any day time medication use for symptoms
PM10 24hr				
PM1024hr	lag0	0.9980 (0.9749 to 1.0217), p=0.87	1.0004 (0.9688 to 1.0330), p=0.98	0.9926 (0.9697 to 1.0161), p=0.53
PM1024hr	lag1	1.0172 (0.9885 to 1.0469), p=0.24	1.0257 (0.9858 to 1.0672), p=0.21	1.0100 (0.9823 to 1.0386), p=0.48
PM1024hr	lag2	1.0093 (0.9806 to 1.0389), p=0.53	1.0273 (0.9870 to 1.0691), p=0.19	1.0059 (0.9782 to 1.0343), p=0.68

Table 8.13. Air pollution and health outcomes, PM10 and 4hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Evening PEF	Evening FEV1	Morning PEF	Morning FEV1
PM1024hr	lag0	-0.0810 (-0.4555 to 0.2934), p=0.67	-0.0001 (-0.0026 to 0.0024), p=0.95		
PM1024hr	lag1	-0.0198 (-0.4684 to 0.4288), p=0.93	-0.0003 (-0.0033 to 0.0027), p=0.85	0.1070 (-0.1840 to 0.3981), p=0.47	0.0000 (-0.0020 to 0.0021), p=0.96
PM1024hr	lag2	0.0539 (-0.3844 to 0.4922), p=0.81	0.0000 (-0.0029 to 0.0029), p=1.00	-0.3599 (-0.7212 to 0.0015), p=0.051	-0.0017 (-0.0042 to 0.0008), p=0.19
PM1024hr	lag3			0.1683 (-0.1956 to 0.5321), p=0.36	0.0013 (-0.0012 to 0.0038), p=0.32

Table 8.14. Air pollution and health outcomes, PM10 and 4hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Night cough	Night wheeze	Night shortness of breath	Any night symptoms	Any night reliever medications use
PM10 24hr						
PM1024hr	lag1	1.0011 (0.9812 to 1.0213), p=0.92	1.0177 (0.9937 to 1.0423), p=0.15	0.9894 (0.9498 to 1.0306), p=0.61	1.0000 (0.9819 to 1.0184), p=1.00	0.9957 (0.9639 to 1.0286), p=0.80
PM1024hr	lag2	1.0115 (0.9891 to 1.0344), p=0.32	1.0288 (0.9994 to 1.0592), p=0.055	1.0190 (0.9792 to 1.0604), p=0.36	1.0070 (0.9866 to 1.0279), p=0.50	0.9870 (0.9517 to 1.0235), p=0.48
PM1024hr	lag3	1.0002 (0.9779 to 1.0230), p=0.99	1.0267 (0.9987 to 1.0554), p=0.062	0.9823 (0.9387 to 1.0279), p=0.44	1.0013 (0.9814 to 1.0217), p=0.90	1.0026 (0.9685 to 1.0379), p=0.88

Table 8.15. Air pollution and health outcomes, PM10 and 4hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day cough	Day wheeze	Day shortness of breath	Day runny nose	Day eye irritation	Day fever	Any day symptoms
PM10 24hr								
PM1024hr	lag0	1.0058 (0.9889 to 1.0229), p=0.51	1.0137 (0.9922 to 1.0357), p=0.21	0.9968 (0.9681 to 1.0264), p=0.83	0.9989 (0.9802 to 1.0180), p=0.91	0.9816 (0.9530 to 1.0111), p=0.22	0.9856 (0.9601 to 1.0118), p=0.28	0.9947 (0.9799 to 1.0097), p=0.49
PM1024hr	lag1	1.0042 (0.9843 to 1.0245), p=0.68	0.9950 (0.9684 to 1.0225), p=0.72	1.0013 (0.9687 to 1.0351), p=0.94	0.9934 (0.9728 to 1.0144), p=0.53	0.9975 (0.9666 to 1.0295), p=0.88	0.9959 (0.9675 to 1.0252), p=0.78	0.9947 (0.9780 to 1.0118), p=0.54
PM1024hr	lag2	1.0153 (0.9956 to 1.0354), p=0.13	0.9927 (0.9660 to 1.0201), p=0.60	1.0075 (0.9747 to 1.0414), p=0.66	0.9867 (0.9661 to 1.0077), p=0.21	1.0016 (0.9715 to 1.0325), p=0.92	1.0092 (0.9824 to 1.0366), p=0.51	0.9957 (0.9792 to 1.0124), p=0.61

Table 8.16. Air pollution and health outcomes, PM10 and 4hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day time reliever use for symptoms	Day time preventer use for symptoms	Any day time medication use for symptoms
PM10 24hr				
PM1024hr	lag0	0.9977 (0.9746 to 1.0213), p=0.85	1.0015 (0.9698 to 1.0342), p=0.93	0.9924 (0.9694 to 1.0158), p=0.52
PM1024hr	lag1	1.0170 (0.9882 to 1.0466), p=0.25	1.0266 (0.9866 to 1.0681), p=0.20	1.0099 (0.9822 to 1.0384), p=0.49
PM1024hr	lag2	1.0093 (0.9805 to 1.0389), p=0.53	1.0276 (0.9873 to 1.0695), p=0.18	1.0058 (0.9782 to 1.0342), p=0.68

Table 8.17. Air pollution and health outcomes, PM10 and 8hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Evening PEF	Evening FEV1	Morning PEF	Morning FEV1
PM1024hr	lag0	-0.1386 (-0.5181 to 0.2408), p=0.47	-0.0003 (-0.0028 to 0.0022), p=0.80		
PM1024hr	lag1	-0.0544 (-0.5075 to 0.3987), p=0.81	-0.0003 (-0.0033 to 0.0026), p=0.82	0.1263 (-0.1661 to 0.4187), p=0.40	0.0001 (-0.0019 to 0.0021), p=0.89
PM1024hr	lag2	0.0271 (-0.4167 to 0.4709), p=0.90	-0.0001 (-0.0030 to 0.0029), p=0.97	-0.3413 (-0.7038 to 0.0213), p=0.065	-0.0016 (-0.0041 to 0.0009), p=0.21
PM1024hr	lag3			0.1722 (-0.1935 to 0.5380), p=0.36	0.0013 (-0.0012 to 0.0038), p=0.32

Table 8.18. Air pollution and health outcomes, PM10 and 8hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Night cough	Night wheeze	Night shortness of breath	Any night symptoms	Any night reliever medications use
PM10 24hr						
PM1024hr	lag1	1.0027 (0.9832 to 1.0226), p=0.79	1.0151 (0.9915 to 1.0393), p=0.21	0.9812 (0.9417 to 1.0223), p=0.36	1.0001 (0.9823 to 1.0182), p=0.99	0.9961 (0.9646 to 1.0286), p=0.81
PM1024hr	lag2	1.0131 (0.9909 to 1.0359), p=0.25	1.0274 (0.9981 to 1.0576), p=0.067	1.0126 (0.9731 to 1.0537), p=0.54	1.0071 (0.9868 to 1.0278), p=0.49	0.9877 (0.9524 to 1.0242), p=0.50
PM1024hr	lag3	1.0016 (0.9794 to 1.0243), p=0.89	1.0254 (0.9975 to 1.0541), p=0.074	0.9782 (0.9347 to 1.0238), p=0.34	1.0016 (0.9818 to 1.0218), p=0.88	1.0027 (0.9685 to 1.0381), p=0.88

Table 8.19. Air pollution and health outcomes, PM10 and 8hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day cough	Day wheeze	Day shortness of breath	Day runny nose	Day eye irritation	Day fever	Any day symptoms
PM10 24hr								
PM1024hr	lag0	1.0053 (0.9885 to 1.0224), p=0.54	1.0150 (0.9936 to 1.0369), p=0.17	0.9965 (0.9680 to 1.0259), p=0.81	1.0012 (0.9826 to 1.0201), p=0.90	0.9824 (0.9536 to 1.0120), p=0.24	0.9860 (0.9606 to 1.0121), p=0.29	0.9956 (0.9809 to 1.0104), p=0.56
PM1024hr	lag1	1.0042 (0.9844 to 1.0243), p=0.68	0.9971 (0.9706 to 1.0245), p=0.84	1.0001 (0.9677 to 1.0337), p=0.99	0.9951 (0.9747 to 1.0160), p=0.64	0.9980 (0.9670 to 1.0299), p=0.90	0.9958 (0.9676 to 1.0248), p=0.78	0.9954 (0.9788 to 1.0123), p=0.59
PM1024hr	lag2	1.0153 (0.9957 to 1.0354), p=0.13	0.9941 (0.9674 to 1.0216), p=0.67	1.0066 (0.9739 to 1.0403), p=0.70	0.9883 (0.9678 to 1.0092), p=0.27	1.0021 (0.9720 to 1.0331), p=0.89	1.0093 (0.9827 to 1.0367), p=0.50	0.9964 (0.9800 to 1.0131), p=0.67

Table 8.20. Air pollution and health outcomes, PM10 and 8hr ozone with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day time reliever use for symptoms	Day time preventer use for symptoms	Any day time medication use for symptoms
PM10 24hr				
PM1024hr	lag0	0.9958 (0.9727 to 1.0193), p=0.72	0.9997 (0.9681 to 1.0323), p=0.99	0.9912 (0.9684 to 1.0144), p=0.45
PM1024hr	lag1	1.0155 (0.9870 to 1.0449), p=0.29	1.0236 (0.9846 to 1.0642), p=0.24	1.0092 (0.9818 to 1.0375), p=0.51
PM1024hr	lag2	1.0079 (0.9793 to 1.0374), p=0.59	1.0241 (0.9847 to 1.0650), p=0.23	1.0050 (0.9775 to 1.0333), p=0.72

Table 8.21. Air pollution and health outcomes, PM10 and 8hr CO with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Evening PEF	Evening FEV1	Morning PEF	Morning FEV1
PM1024hr	lag0	-0.1877 (-0.6581 to 0.2826), p=0.43	-0.0001 (-0.0033 to 0.0032), p=0.97		
PM1024hr	lag1	-0.1537 (-0.7169 to 0.4094), p=0.59	-0.0014 (-0.0052 to 0.0025), p=0.49	0.3708 (-0.0045 to 0.7460), p=0.053	0.0028 (0.0001 to 0.0056), p=0.042
PM1024hr	lag2	-0.0218 (-0.5751 to 0.5314), p=0.94	-0.0002 (-0.0040 to 0.0035), p=0.90	-0.0382 (-0.4827 to 0.4063), p=0.87	-0.0005 (-0.0037 to 0.0028), p=0.78
PM1024hr	lag3			0.0252 (-0.4326 to 0.4829), p=0.91	-0.0011 (-0.0044 to 0.0022), p=0.50

Table 8.22. Air pollution and health outcomes, PM10 and 8hr CO with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Night cough	Night wheeze	Night shortness of breath	Any night symptoms	Any night reliever medications use
PM10 24hr						
PM1024hr	lag1	1.0163 (0.9960 to 1.0370), p=0.12	1.0408 (1.0140 to 1.0682), p=0.003	1.0207 (0.9854 to 1.0572), p=0.25	1.0152 (0.9953 to 1.0355), p=0.14	0.9991 (0.9640 to 1.0355), p=0.96
PM1024hr	lag2	1.0194 (0.9972 to 1.0420), p=0.087	1.0453 (1.0143 to 1.0774), p=0.004	1.0417 (1.0031 to 1.0819), p=0.034	1.0206 (0.9990 to 1.0426), p=0.062	0.9941 (0.9580 to 1.0316), p=0.75
PM1024hr	lag3	1.0114 (0.9896 to 1.0336), p=0.31	1.0361 (1.0062 to 1.0670), p=0.018	1.0319 (0.9927 to 1.0726), p=0.11	1.0178 (0.9969 to 1.0391), p=0.095	0.9921 (0.9561 to 1.0294), p=0.67

Table 8.23. Air pollution and health outcomes, PM10 and 8hr CO with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day cough	Day wheeze	Day shortness of breath	Day runny nose	Day eye irritation	Day fever	Any day symptoms
PM10 24hr								
PM1024hr	lag0	0.9991 (0.9799 to 1.0187), p=0.93	1.0242 (1.0016 to 1.0473), p=0.036	1.0178 (0.9922 to 1.0441), p=0.17	1.0032 (0.9830 to 1.0239), p=0.76	0.9912 (0.9629 to 1.0204), p=0.55	1.0233 (0.9991 to 1.0480), p=0.060	0.9988 (0.9818 to 1.0160), p=0.89
PM1024hr	lag1	1.0229 (1.0006 to 1.0456), p=0.044	1.0230 (0.9952 to 1.0515), p=0.11	1.0269 (0.9954 to 1.0594), p=0.094	0.9945 (0.9723 to 1.0172), p=0.63	1.0114 (0.9798 to 1.0440), p=0.49	1.0225 (0.9947 to 1.0511), p=0.11	1.0175 (0.9983 to 1.0371), p=0.073
PM1024hr	lag2	1.0179 (0.9962 to 1.0402), p=0.11	1.0269 (1.0002 to 1.0543), p=0.049	1.0269 (0.9958 to 1.0588), p=0.090	0.9917 (0.9697 to 1.0142), p=0.47	0.9963 (0.9645 to 1.0292), p=0.82	1.0149 (0.9875 to 1.0431), p=0.29	1.0085 (0.9900 to 1.0272), p=0.37

Table 8.24. Air pollution and health outcomes, PM10 and 8hr CO with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day time reliever use for symptoms	Day time preventer use for symptoms	Any day time medication use for symptoms
PM10 24hr				
PM1024hr	lag0	1.0158 (0.9906 to 1.0418), p=0.22	1.0271 (0.9928 to 1.0627), p=0.12	1.0082 (0.9843 to 1.0327), p=0.51
PM1024hr	lag1	1.0349 (1.0043 to 1.0664), p=0.025	1.0621 (1.0176 to 1.1086), p=0.006	1.0292 (1.0005 to 1.0587), p=0.046
PM1024hr	lag2	1.0508 (1.0203 to 1.0823), p=0.001	1.0567 (1.0133 to 1.1020), p=0.010	1.0499 (1.0211 to 1.0795), p=0.0006

Table 8.25. Air pollution and health outcomes, PM10 and 1hr SO2 with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Evening PEF	Evening FEV1	Morning PEF	Morning FEV1
PM1024hr	lag0	-0.0118 (-0.5283 to 0.5048), p=0.96	-0.0003 (-0.0038 to 0.0033), p=0.88		
PM1024hr	lag1	0.2130 (-0.4689 to 0.8949), p=0.54	0.0016 (-0.0031 to 0.0063), p=0.51	0.1153 (-0.2669 to 0.4974), p=0.55	0.0007 (-0.0019 to 0.0032), p=0.62
PM1024hr	lag2	-0.2673 (-0.9349 to 0.4002), p=0.43	0.0001 (-0.0045 to 0.0047), p=0.95	-0.7972 (-1.3148 to -0.2796), p=0.003	-0.0041 (-0.0076 to -0.0006), p=0.023
PM1024hr	lag3			0.1646 (-0.3440 to 0.6732), p=0.53	0.0028 (-0.0006 to 0.0062), p=0.11

Table 8.26. Air pollution and health outcomes, PM10 and 1hr SO2 with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Night cough	Night wheeze	Night shortness of breath	Any night symptoms	Any night reliever medications use
PM10 24hr						
PM1024hr	lag1	1.0246 (1.0016 to 1.0482), p=0.036	0.9793 (0.9398 to 1.0204), p=0.32	0.9805 (0.9241 to 1.0402), p=0.51	1.0173 (0.9954 to 1.0396), p=0.12	0.9924 (0.9506 to 1.0361), p=0.73
PM1024hr	lag2	1.0269 (0.9993 to 1.0552), p=0.056	1.0229 (0.9827 to 1.0648), p=0.27	1.0317 (0.9756 to 1.0912), p=0.27	1.0256 (0.9992 to 1.0528), p=0.058	0.9594 (0.9135 to 1.0077), p=0.098
PM1024hr	lag3	1.0199 (0.9928 to 1.0478), p=0.15	0.9811 (0.9380 to 1.0261), p=0.40	1.0019 (0.9381 to 1.0701), p=0.95	1.0060 (0.9797 to 1.0329), p=0.66	0.9946 (0.9496 to 1.0416), p=0.82

Table 8.27. Air pollution and health outcomes, PM10 and 1hr SO2 with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day cough	Day wheeze	Day shortness of breath	Day runny nose	Day eye irritation	Day fever	Any day symptoms
PM1024hr								
PM1024hr	lag0	1.0156 (0.9919 to 1.0398), p=0.20	1.0153 (0.9820 to 1.0498), p=0.37	0.9926 (0.9506 to 1.0364), p=0.74	1.0244 (1.0007 to 1.0487), p=0.044	1.0262 (0.9800 to 1.0745), p=0.27	0.9971 (0.9599 to 1.0357), p=0.88	1.0124 (0.9922 to 1.0329), p=0.23
PM1024hr	lag1	1.0176 (0.9899 to 1.0462), p=0.21	0.9953 (0.9581 to 1.0338), p=0.81	1.0028 (0.9563 to 1.0515), p=0.91	1.0395 (1.0106 to 1.0692), p=0.007	1.0481 (0.9972 to 1.1015), p=0.064	1.0082 (0.9680 to 1.0501), p=0.69	1.0257 (1.0018 to 1.0502), p=0.035
PM1024hr	lag2	1.0134 (0.9854 to 1.0422), p=0.35	0.9999 (0.9585 to 1.0432), p=1.00	1.0183 (0.9668 to 1.0725), p=0.49	1.0223 (0.9953 to 1.0500), p=0.11	1.0600 (1.0020 to 1.1214), p=0.042	1.0238 (0.9820 to 1.0674), p=0.27	1.0137 (0.9912 to 1.0367), p=0.23

Table 8.28. Air pollution and health outcomes, PM10 and 1hr SO2 with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day time reliever use for symptoms	Day time preventer use for symptoms	Any day time medication use for symptoms
PM10 24hr				
PM1024hr	lag0	1.0193 (0.9821 to 1.0578), p=0.31	1.0111 (0.9588 to 1.0662), p=0.68	1.0031 (0.9673 to 1.0403), p=0.87
PM1024hr	lag1	1.0281 (0.9868 to 1.0712), p=0.18	1.0318 (0.9764 to 1.0903), p=0.27	1.0108 (0.9711 to 1.0522), p=0.60
PM1024hr	lag2	1.0124 (0.9682 to 1.0586), p=0.59	1.0447 (0.9896 to 1.1029), p=0.11	1.0043 (0.9629 to 1.0475), p=0.84

Table 8.29. Air pollution and health outcomes, PM10 and 24hr SO2 with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Evening PEF	Evening FEV1	Morning PEF	Morning FEV1
PM1024hr	lag0	-0.0552 (-0.5757 to 0.4652), p=0.84	-0.0004 (-0.0040 to 0.0031), p=0.81		
PM1024hr	lag1	0.2011 (-0.4789 to 0.8810), p=0.56	0.0015 (-0.0032 to 0.0062), p=0.53	0.1253 (-0.2592 to 0.5098), p=0.52	0.0007 (-0.0019 to 0.0033), p=0.59
PM1024hr	lag2	-0.2763 (-0.9362 to 0.3837), p=0.41	0.0001 (-0.0044 to 0.0047), p=0.96	-0.8187 (-1.3325 to -0.3048), p=0.002	-0.0043 (-0.0078 to -0.0008), p=0.015
PM1024hr	lag3			0.1926 (-0.3152 to 0.7004), p=0.46	0.0030 (-0.0004 to 0.0064), p=0.083

Table 8.30. Air pollution and health outcomes, PM10 and 24hr SO2 with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Night cough	Night wheeze	Night shortness of breath	Any night symptoms	Any night reliever medications use
PM10 24hr						
PM1024hr	lag1	1.0267 (1.0033 to 1.0507), p=0.025	0.9800 (0.9400 to 1.0217), p=0.34	0.9841 (0.9270 to 1.0448), p=0.60	1.0188 (0.9965 to 1.0416), p=0.098	0.9911 (0.9491 to 1.0349), p=0.68
PM1024hr	lag2	1.0277 (1.0003 to 1.0559), p=0.047	1.0228 (0.9827 to 1.0645), p=0.27	1.0326 (0.9762 to 1.0922), p=0.26	1.0263 (1.0000 to 1.0533), p=0.050	0.9579 (0.9124 to 1.0058), p=0.084
PM1024hr	lag3	1.0197 (0.9926 to 1.0476), p=0.16	0.9812 (0.9378 to 1.0266), p=0.41	1.0022 (0.9382 to 1.0706), p=0.95	1.0055 (0.9793 to 1.0325), p=0.68	0.9925 (0.9478 to 1.0392), p=0.75

Table 8.31. Air pollution and health outcomes, PM10 and 24hr SO2 with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day cough	Day wheeze	Day shortness of breath	Day runny nose	Day eye irritation	Day fever	Any day symptoms
PM10 24hr								
PM1024hr	lag0	1.0158 (0.9919 to 1.0404), p=0.20	1.0183 (0.9843 to 1.0535), p=0.29	0.9907 (0.9484 to 1.0348), p=0.67	1.0223 (0.9985 to 1.0468), p=0.067	1.0252 (0.9789 to 1.0738), p=0.29	1.0006 (0.9628 to 1.0398), p=0.98	1.0117 (0.9913 to 1.0325), p=0.26
PM1024hr	lag1	1.0180 (0.9903 to 1.0465), p=0.21	0.9962 (0.9588 to 1.0350), p=0.84	1.0025 (0.9557 to 1.0516), p=0.92	1.0369 (1.0082 to 1.0664), p=0.012	1.0481 (0.9970 to 1.1017), p=0.065	1.0097 (0.9693 to 1.0517), p=0.64	1.0253 (1.0015 to 1.0496), p=0.037
PM1024hr	lag2	1.0122 (0.9845 to 1.0406), p=0.39	1.0009 (0.9595 to 1.0441), p=0.97	1.0164 (0.9672 to 1.0681), p=0.52	1.0199 (0.9927 to 1.0479), p=0.15	1.0547 (1.0004 to 1.1120), p=0.048	1.0261 (0.9833 to 1.0708), p=0.24	1.0119 (0.9893 to 1.0349), p=0.30

Table 8.32. Air pollution and health outcomes, PM10 and 24hr SO2 with interaction terms, MIXED-GLIMMIX models, ACHAPS

Pollutant	Lag	Day time reliever use for symptoms	Day time preventer use for symptoms	Any day time medication use for symptoms
PM10 24hr				
PM1024hr	lag0	1.0206 (0.9829 to 1.0598), p=0.29	1.0112 (0.9595 to 1.0657), p=0.68	1.0046 (0.9682 to 1.0424), p=0.81
PM1024hr	lag1	1.0287 (0.9872 to 1.0720), p=0.18	1.0305 (0.9754 to 1.0887), p=0.28	1.0111 (0.9713 to 1.0526), p=0.59
PM1024hr	lag2	1.0122 (0.9684 to 1.0579), p=0.59	1.0476 (0.9907 to 1.1077), p=0.10	1.0052 (0.9634 to 1.0487), p=0.81