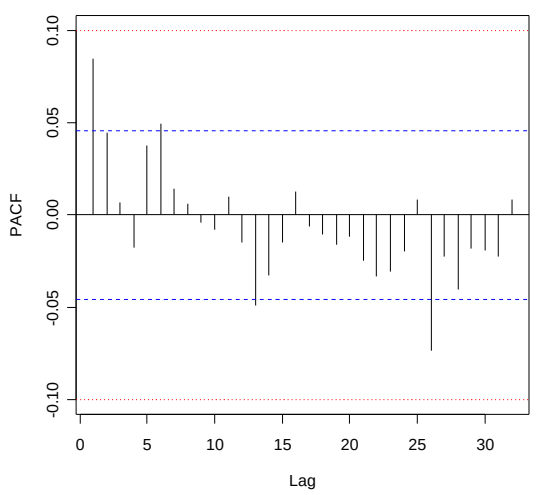
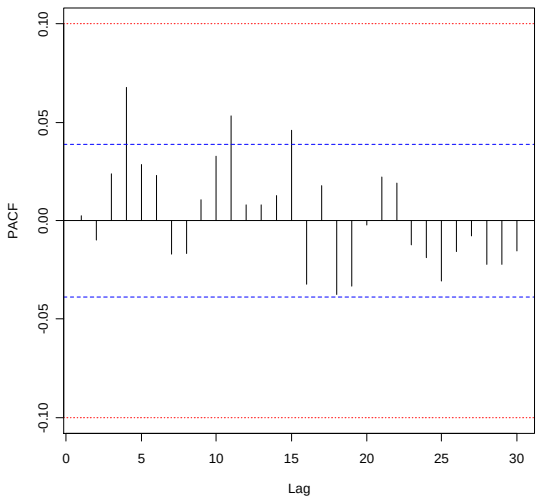
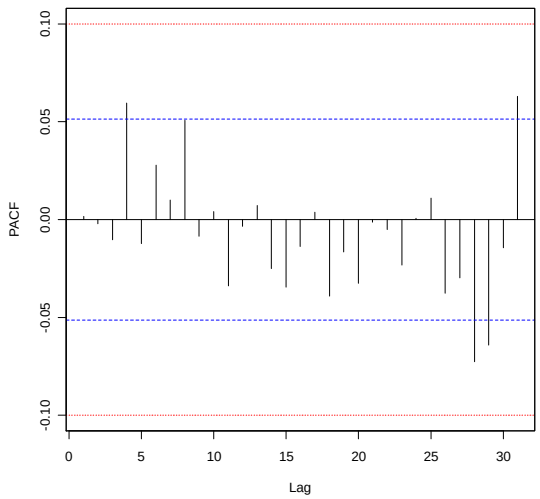
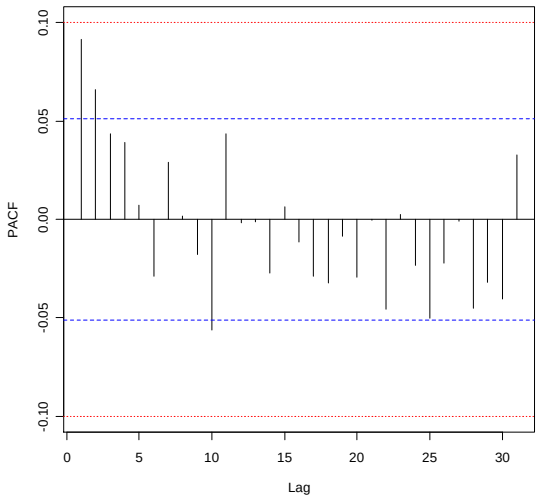
Supplemental Material, Table 1: Leading causes of death in each city

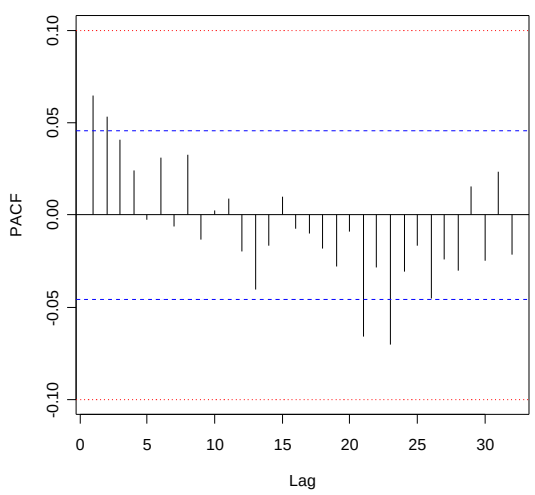
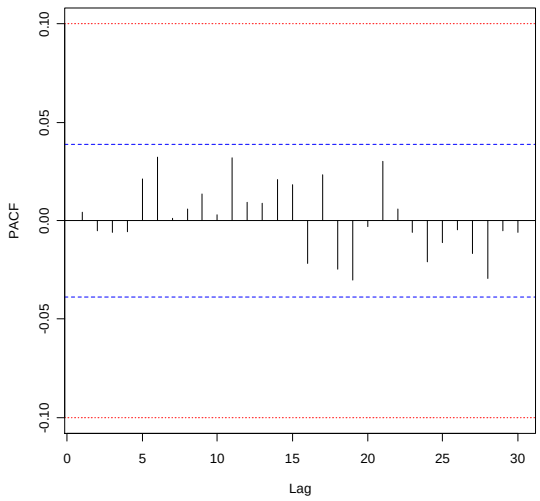
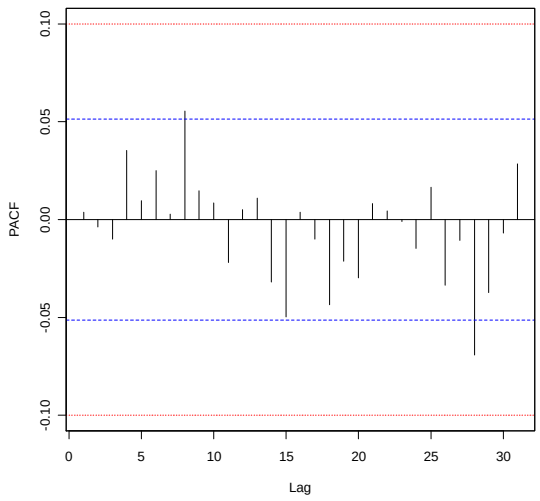
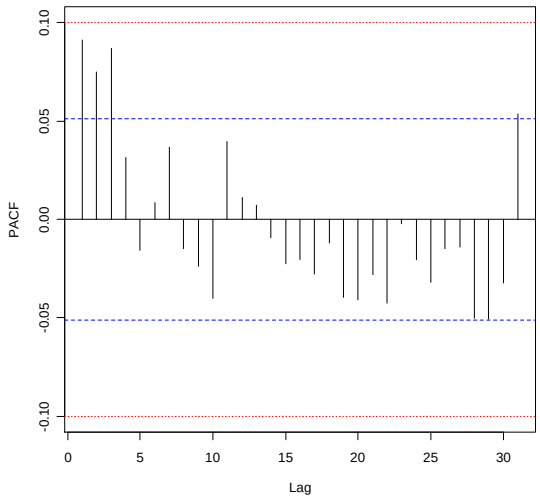
	Bangkok	Hong Kong	Shanghai	Wuhan
Leading causes of death (for all ages and both sexes)	(2004 data)	(2001 data)	(2004 data)	(2000-2002 data)
	1. Neoplasms 17.7 %	1. Malignant neoplasms 34.2%	1. Circulatory diseases 32.9%	1. Cerebrovascular diseases 30.4%
	2. Diseases of circulatory system 15.1 %	2. Heart diseases 14.1%	2. Tumor 30.4%	2. Neoplasms 17.6%
	3. Certain infectious and parasitic diseases 14.9 %	3. Cerebrovascular disease 9.4%	3. Respiratory diseases 12.4%	3. Cardiovascular diseases 13.1%
	4. External causes 8.9 %	4. Pneumonia 9.1%	4. Injury and poisoning 6.4%	4. Respiratory diseases 11.8%
	5. Disease of respiratory system 8.2 %	5. External causes 5.5%	5. Endocrine, immune and metabolic diseases 4.0%	5. Injury and poisoning 6.9%

All data in this table were quoted or derived from the local government in each city

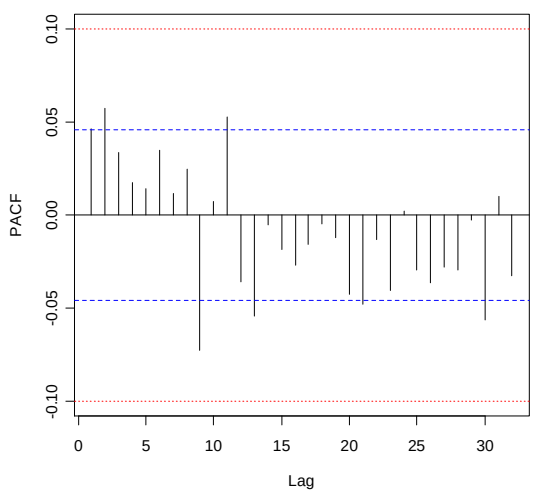
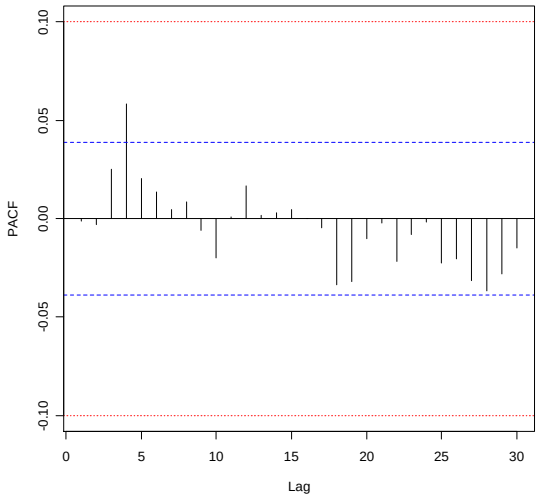
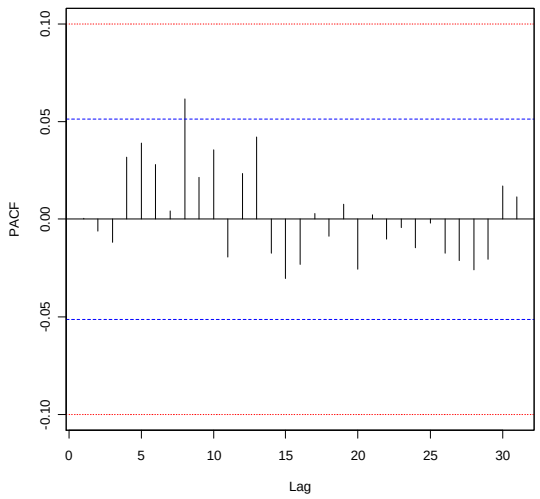
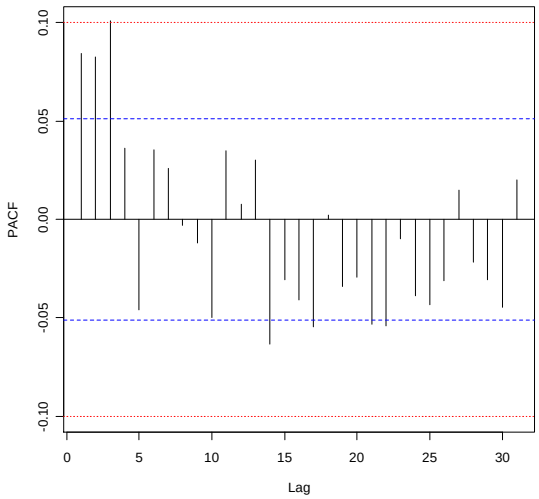
Supplemental Material, Figure 1A: Partial autocorrelation function (PACF) plots of the core models – for all natural causes, all ages

Bangkok	Hong Kong
	
Shanghai	**Wuhan**
	

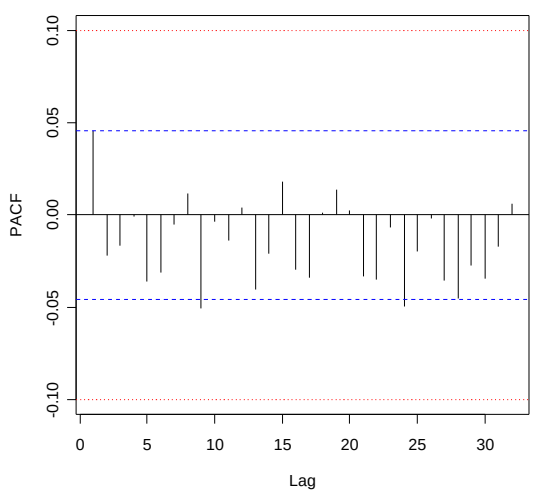
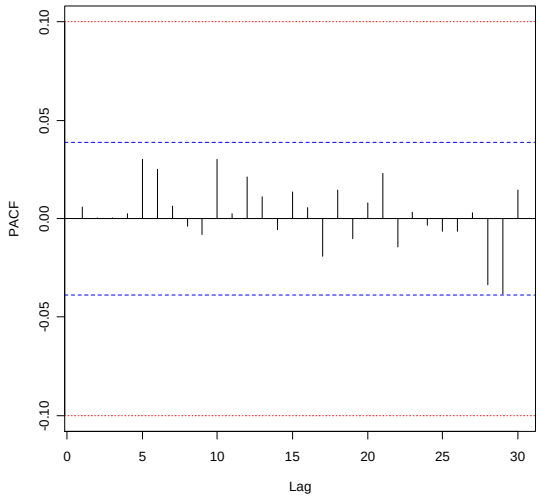
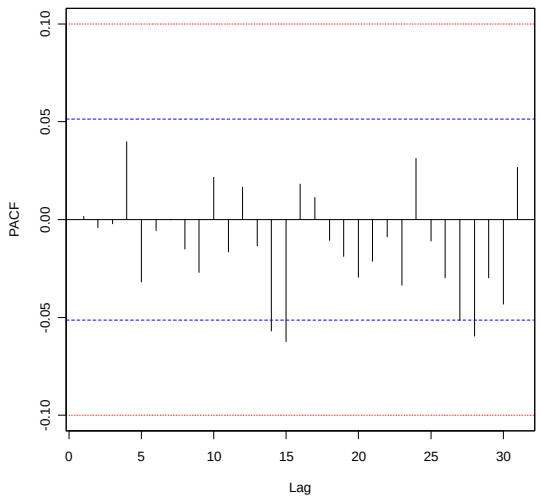
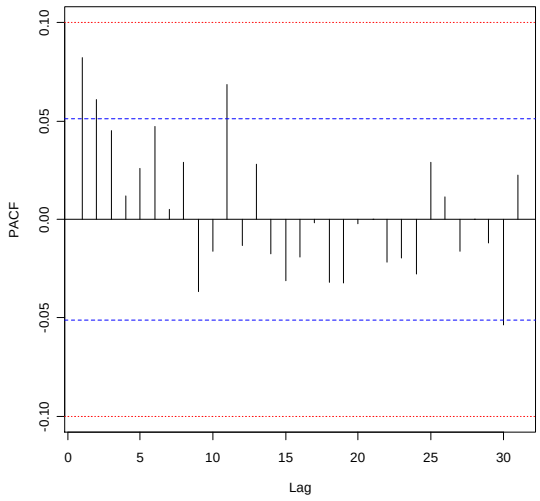
Supplemental Material, Figure 1B: PACF plots in the core models – for all natural causes, aged 65+

Bangkok	Hong Kong
	
Shanghai	**Wuhan**
	

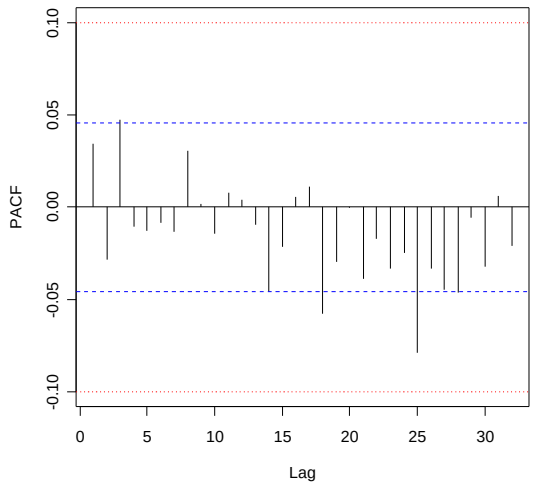
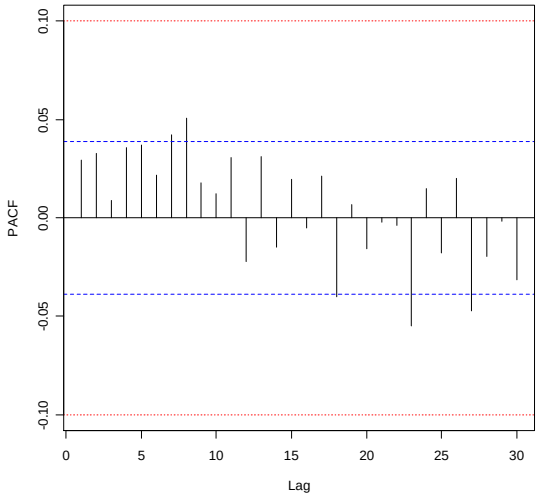
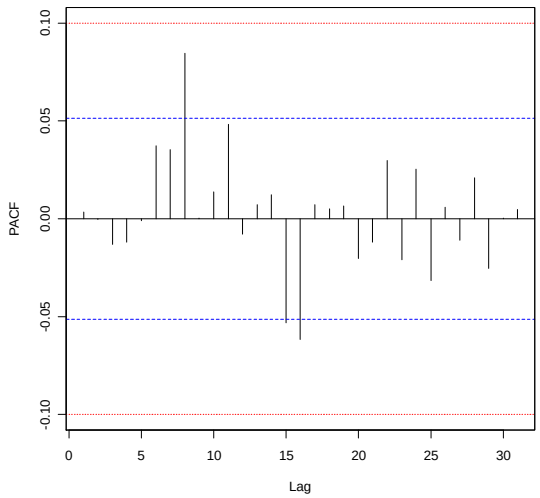
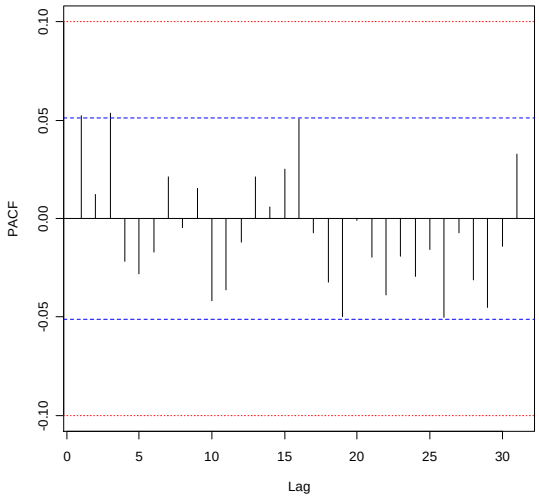
Supplemental Material, Figure 1C: PACF plots in the core models – for all natural causes, aged 75+

Bangkok	Hong Kong
	
Shanghai	**Wuhan**
	

Supplemental Material, Figure 1D: PACF plots in the core models – for cardiovascular disease

Bangkok	Hong Kong
	
Shanghai	**Wuhan**
	

Supplemental Material, Figure 1E: PACF plots in the core models – for respiratory disease

Bangkok	Hong Kong
	
Shanghai	**Wuhan**
	

Supplemental Material, Table 2A: Excess risk in % (95% confidence interval) – Comparison between combined effect estimates of different multi-cities studies for a 10 µg/m^3 increase in NO_2

	PAPA (n=4)		Asian cities[a]		NMMAPS[b,c]		APHEA[d] (n=30)	
	Fixed	Random	Fixed	Random	Fixed	Random	Fixed	Random
All natural causes All ages	1.09 (0.90, 1.29)	1.23 (0.84, 1.62)						0.30 (0.22, 0.38)
Cardiovascular	1.26 (0.93, 1.58)	1.36 (0.89, 1.82)						0.40 (0.29, 0.52)
Respiratory	1.33 (0.84, 1.82)	1.48 (0.68, 2.28)						0.38 (0.17,0.58)

[a] HEI 2004
[b] 90 US cities (Samet et al 2000)
[c] 95 US cities (Bell et al 2004)
[d] 30 European cities (Samoli et al 2006)
[e] 12 European cities (Katsouyanni et al 1997)
[f] Meta-analysis of time-series and panel studies of Particulate matter (PM) and Ozone(O_3) (Anderson et al 2004)

PAPA: Public Health and Air Pollution in Asia Project
NMMAPS: National Morbidity, Mortality and Air Pollution Study
APHEA: Air Pollution and Health: A European Approach

Supplemental Material, Table 2B: Excess risk in % (95% confidence interval) – Comparison between combined effect estimates of different multi-cities studies for a 10 µg/m^3 increase in SO_2

	PAPA (n=4)		Asian cities[a] (n=11)		NMMAPS[b,c]		APHEA[e] (n=12)	
	Fixed	Random	Fixed	Random	Fixed	Random	Fixed	Random
All natural causes All ages	1.00 (0.75, 1.24)	1.00 (0.75, 1.24)	0.35 (0.26, 0.45)	0.52 (0.30, 0.74)				0.4 (0.3, 0.5)
Cardiovascular	1.09 (0.71, 1.47)	1.09 (0.71, 1.47)						
Respiratory	1.47 (0.85, 2.08)	1.47 (0.85, 2.08)						

[a] HEI 2004
[b] 90 US cities (Samet et al 2000)
[c] 95 US cities (Bell et al 2004)
[d] 30 European cities (Samoli et al 2006)
[e] 12 European cities (Katsouyanni et al 1997)
[f] Meta-analysis of time-series and panel studies of Particulate matter (PM) and Ozone(O_3) (Anderson et al 2004)

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NMMAPS: National Morbidity, Mortality and Air Pollution Study
APHEA: Air Pollution and Health: A European Approach

Supplemental Material, Table 2C: Excess risk in % (95% confidence interval) – Comparison between combined effect estimates of different multi-cities studies for a 10 µg/m^3 increase in PM_{10}

	PAPA (n=4)		Asian cities[a] (n=4)		NMMAPS[b,c]		APHEA[f]	
	Fixed	Random	Fixed	Random	Fixed	Random	Fixed	Random
All natural causes All ages	0.36 (0.27, 0.45)	0.55 (0.26, 0.85)	0.41 (0.25, 0.56)	0.49 (0.23, 0.76)		0.51 (0.07, 0.93)		0.6 (n=14) (0.4, 0.8)
Cardiovascular	0.40 (0.26, 0.53)	0.58 (0.22, 0.93)						0.5 (n=23) (0.1, 1.0)
Respiratory	0.48 (0.25, 0.71)	0.62 (0.22, 1.02)						1.0 (n=20) (0.1, 1.8)

[a] HEI 2004
[b] 90 US cities (Samet et al 2000)
[c] 95 US cities (Bell et al 2004)
[d] 30 European cities (Samoli et al 2006)
[e] 12 European cities (Katsouyanni et al 1997)
[f] Meta-analysis of time-series and panel studies of Particulate matter (PM) and Ozone(O_3) (Anderson et al 2004)

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APHEA: Air Pollution and Health: A European Approach

Supplemental Material, Table 2D: Excess risk in % (95% confidence interval) – Comparison between combined effect estimates of different multi-cities studies for a 10 µg/m^3 increase in O_3

	PAPA (n=4)		Asian cities[a]		NMMAPS[b,c]		APHEA[f]	
	Fixed	Random	Fixed	Random	Fixed	Random[#]	Fixed	Random
All natural causes All ages	0.38 (0.23, 0.53)	0.38 (0.23, 0.53)				0.26 (0.14, 0.39)		0.2 (n=20) (0.0, 0.3)
Cardiovascular	0.34 (0.08, 0.59)	0.37 (0.01, 0.73)				0.32 (0.16, 0.49)		0.4 (n=17) (0.3, 0.5)
Respiratory	0.34 (-0.07 , 0.75)	0.34 (-0.07 , 0.75)				0.32 (0.16, 0.49)		-0.1 (n=15) (-0.5, 0.4)

[a] HEI 2004
[b] 90 US cities (Samet et al 2000)
[c] 95 US cities (Bell et al 2004)
[d] 30 European cities (Samoli et al 2006)
[e] 12 European cities (Katsouyanni et al 1997)
[f] Meta-analysis of time-series and panel studies of Particulate matter (PM) and Ozone(O_3) (Anderson et al 2004)
[#] The conversion factor of 2 was used to convert the ppb to µg/m-^{3}; Cardiovascular and respiratory death were combined into one group

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NMMAPS: National Morbidity, Mortality and Air Pollution Study
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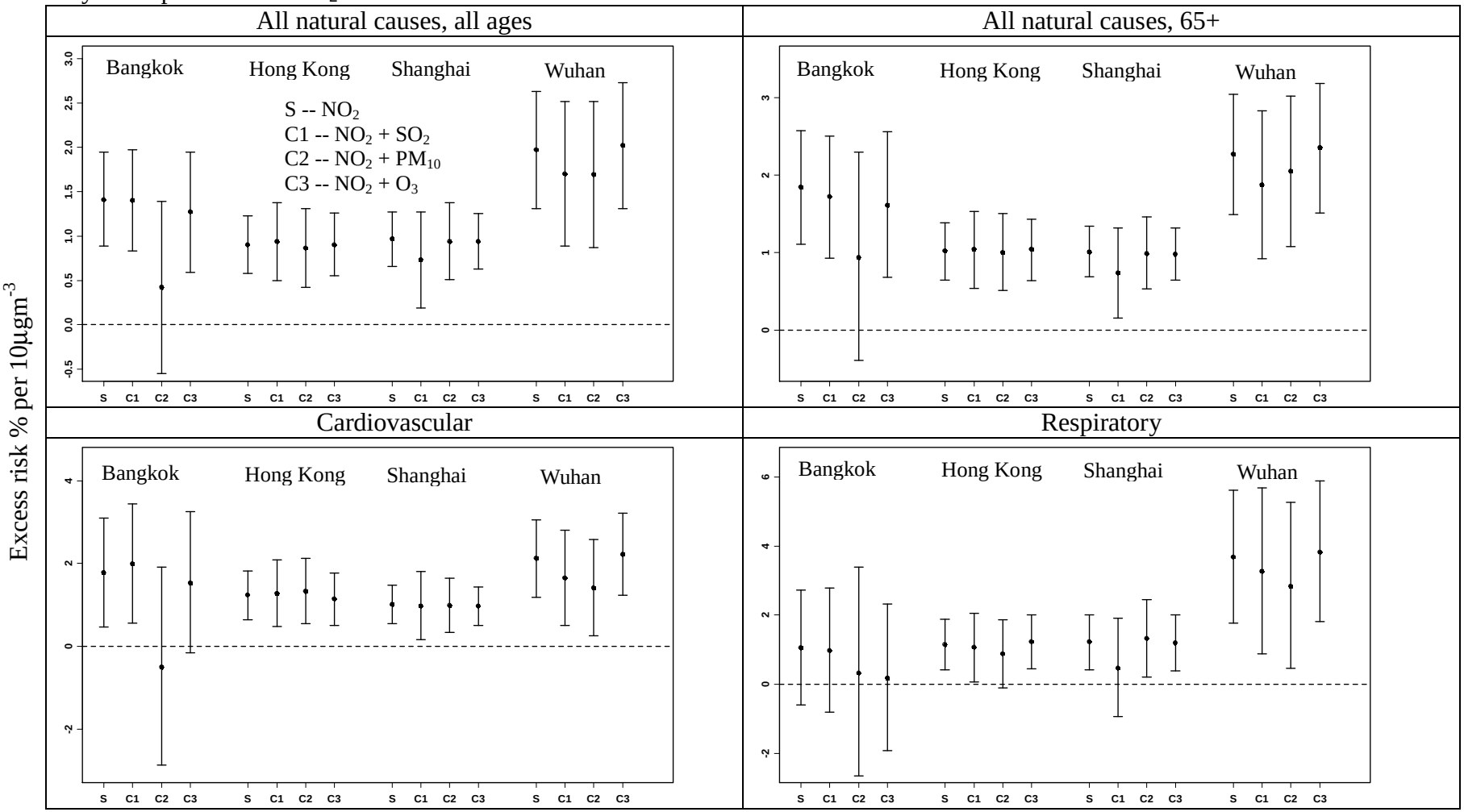
Supplemental Material, Table 3: Spearman's correlation and partial correlation with seasonal corrections between daily pollutants in the study period

	Spearman's correlation											
	SO_2				PM_{10}				O_3			
	Bangkok	Hong Kong	Shanghai	Wuhan	Bangkok	Hong Kong	Shanghai	Wuhan	Bangkok	Hong Kong	Shanghai	Wuhan
NO_2	0.27	0.37	0.64	0.76	0.71	0.80	0.75	0.75	0.61	0.45	-0.04	0.11
SO_2	--	--	--	--	0.24	0.24	0.67	0.65	0.18	-0.13	0.19	0.09
PM_{10}	--	--	--	--	--	--	--	--	0.55	0.58	0.26	0.17
O_3	--	--	--	--	--	--	--	--	--	--	--	--

Supplemental Material, Figure 2A: Excess risk % of mortality (95% CI) for a 10μg/m^3 increase in average concentration of lag 0-1 days – sensitivity of co-pollutant on NO_2 effect estimates



Supplemental Material, Figure 2B: Excess risk % of mortality (95% CI) for a 10μg/m^3 increase in average concentration of lag 0-1 days – sensitivity of co-pollutant on PM_{10} effect estimates