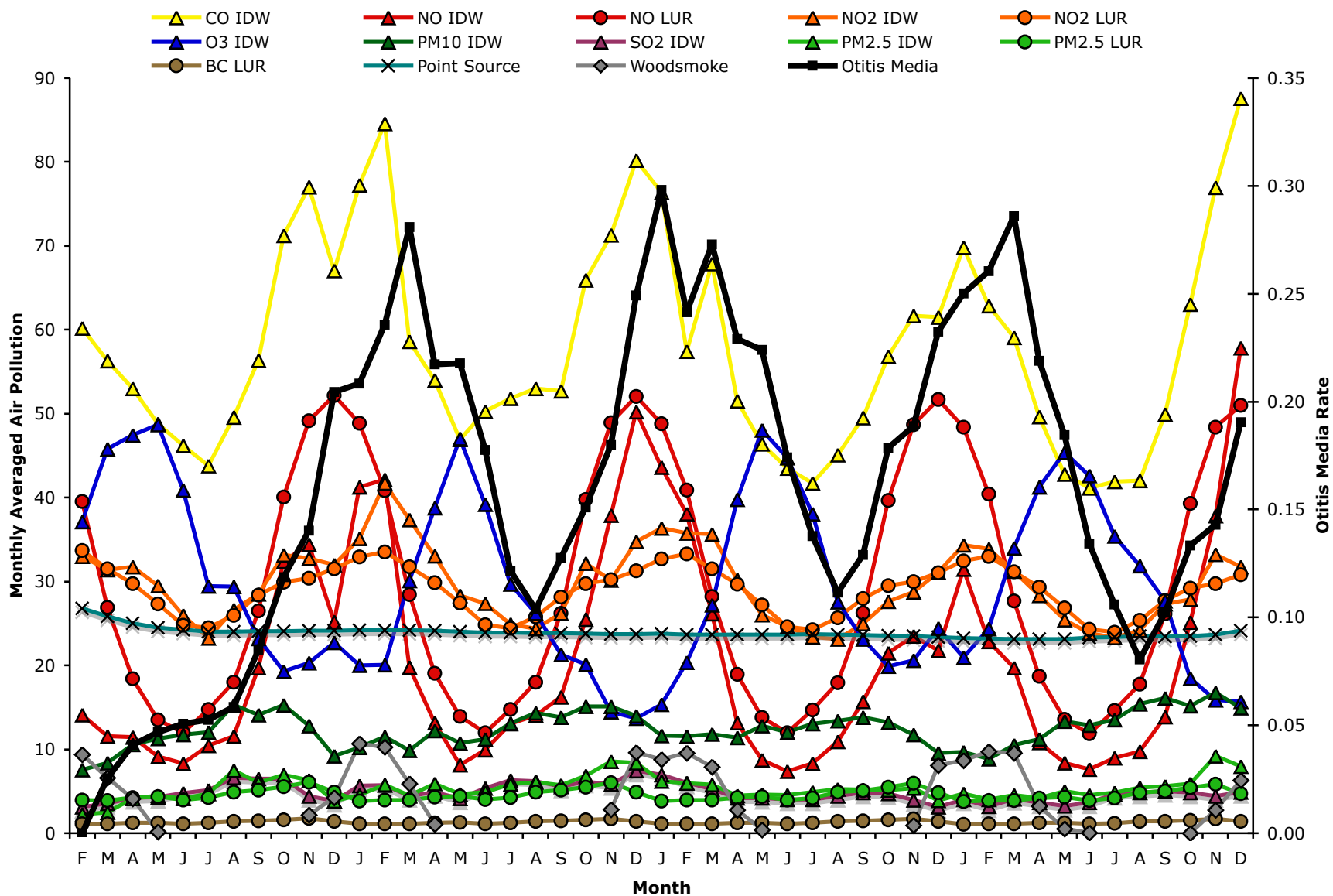


eAppendix

eFigure. Monthly average air pollution concentrations and percent of cohort with an otitis media physician visit, throughout the 4-year study period (February 1999 – December 2000). All concentrations are in $\mu\text{g}/\text{m}^3$ with the exception of black carbon, which is estimated from filter absorbance and is in units of m^{-5} . Woodsmoke exposure is in units of days of exposure for those living in woodsmoke-affected areas.

LUR indicates land use regression; IDW, inverse distance weighted concentrations (3 monitors within 50 km of a residential postal code).



eTable 1. Adjusted estimates for the association between residential air pollution and physician visits for otitis media, by population subset.

Pollutant	Model	Aboriginal (n=1,309)	Smoking During Pregnancy (n=6,133)
		RR ^a (95%CI)	RR ^a (95%CI)
Exposure modeled as a continuous variable – per an IQR increase in pollutant			
NO	IDW	0.95(0.80-1.11)	0.99(0.94-1.05)
	LUR	1.24(1.06-1.46)	1.13(1.06-1.20)
NO ₂	IDW	0.73(0.65-0.83)	0.90(0.84-0.96)
	LUR	1.11(0.94-1.31)	1.01(0.95-1.07)
CO	IDW	0.87(0.73-1.02)	0.95(0.90-1.01)
O ₃	IDW	1.09(0.96-1.24)	0.91(0.87-0.96)
PM _{2.5}	IDW	1.08(0.95-1.23)	1.06(1.01-1.11)
	LUR	1.02(0.93-1.19)	0.96(0.91-1.03)
Black carbon	LUR	1.05(0.93-1.18)	1.02(0.95-1.08)
PM ₁₀	IDW	1.06(0.96-1.17)	0.98(0.93-1.04)
SO ₂	IDW	0.95(0.84-1.07)	0.91(0.86-0.96)
Point source index	10 km buffer	0.65(0.55-0.77)	0.87(0.80-0.95)
Woodsmoke	Days	1.02(0.78-1.34)	1.15(1.05-1.27)
Exposure modeled as a categorical variable			
Expressway	<50m	2.37(1.21-4.65)	0.65(0.31-1.39)
	50-150m	0.61(0.40-0.93)	1.04(0.85-0.28)
	>150m	Reference	Reference
Primary	<50m	1.14(0.86-1.51)	1.01(0.85-1.20)
Highway	50-150m	1.22(1.03-1.43)	1.01(0.90-1.13)

	>150m	Reference	Reference
Secondary	<50m	No Convergence	No Convergence
Highway	50-150m	0.58(0.35-0.98)	0.84(0.64-1.11)
	>150m	Reference	Reference
Major road	<50m	0.73(0.60-0.90)	0.97(0.88-1.07)
	50-150m	0.66(0.56-0.79)	1.00(0.92-1.08)
	>150m	Reference	Reference

^a Adjusted for otitis media season, sex, aboriginal, older siblings, maternal smoking during pregnancy, maternal age, neighborhood income, neighborhood female education.

LUR – land use regression, IDW – inverse distance weighted concentrations (3 monitors within 50 km of a residential postal code).

eTable 2. Adjusted estimates for the association between residential air pollution and physician visits for otitis media with a linked antibiotic prescription.

Pollutant	Model	Number of Children	Crude	Adjusted 1 ^a	Adjusted 2 ^b
			RR (95%CI)	RR (95%CI)	RR (95%CI)
Exposure modeled as a continuous variable – per an IQR increase in pollutant					
NO	IDW	41,476	1.10(1.08- 1.13)	1.13(1.10-1.17)	1.01 (0.99-1.03)
	LUR	37,028	1.12(1.10- 1.14)	1.21(1.19-1.24)	1.12(1.10-1.15)
NO ₂	IDW	41,295	1.00(0.97- 1.02)	1.05(1.01-1.09)	0.88(0.86-0.90)
	LUR	37,028	0.97(0.95- 0.99)	1.07(1.05-1.10)	0.97(0.94-0.99)
CO	IDW	10,402	1.09(1.07- 1.12)	1.09(1.05-1.13)	0.98(0.96-1.01)
O ₃	IDW	46,557	0.87(0.85- 0.89)	0.87(0.81-0.90)	0.88(0.86-0.90)
PM _{2.5}	IDW	43,118	1.01(1.00- 1.03)	1.01(0.97-1.04)	1.07(1.05-1.09)
	LUR	37,028	0.93(0.91- 0.94)	0.94(0.91-0.97)	0.94(0.92-0.96)
Black carbon	LUR	37,028	0.96(0.94- 0.98)	0.96(0.94-0.99)	0.96(0.94-0.99)
PM ₁₀	IDW	46,917	0.80(0.79- 0.82)	0.84(0.81-0.87)	0.99(0.96-1.01)
SO ₂	IDW	41,506	0.82(0.80- 0.84)	0.85(0.82-0.88)	0.88(0.86-0.90)

			0.84)		
Point	10	47,974	0.78(0.76-	0.81(0.77-0.85)	0.81(0.78-0.84)
source	km		0.80)		
index					
Woodsmoke	Days	39,283	1.76(1.70-	1.64(1.55-1.74)	1.27(1.23-1.32)
			1.82)		
Exposure modeled as a categorical variable					
Expressway	<50m	104	1.11(0.85-	0.96(0.60-1.56)	1.14(0.85-1.52)
			1.44)		
	50-	579	1.24(1.13-	1.18(1.00-1.39)	1.07(0.97-1.19)
	150m		1.36)		
	>150m	47,633	Reference	Reference	Reference
Primary	<50m	849	0.93(0.84-	0.83(0.69-0.98)	0.87(0.78-0.97)
highway			1.03)		
	50-	2,465	0.93(0.88-	0.87(0.78-0.96)	0.89(0.83-0.95)
	150m		0.99)		
	>150m	44,811	Reference	Reference	Reference
Secondary	<50m	13	0.58(0.22-	No	0.58(0.19-1.81)
highway			1.56)	Convergence	
	50-	89	1.25(1.09-	1.41(1.07-1.87)	1.14(0.98-1.33)
	150m		1.45)		
	>150m	48,249	Reference	Reference	Reference
Major road	<50m	4,965	0.96(0.92-	1.01(0.94-1.08)	0.97(0.92-1.01)
			1.00)		
	50-	9,286	0.90(0.87-	0.94(0.89-1.00)	0.92(0.89-0.96)
	150m		0.93)		
	>150m	33,245	Reference	Reference	Reference

^a Adjusted for sex, aboriginal, older siblings, maternal smoking during pregnancy, maternal age, neighborhood income, neighborhood female education.

^b Adjusted for otitis media season, sex, aboriginal, older siblings, maternal smoking during pregnancy, maternal age, neighborhood income, neighborhood female education.

LUR – land use regression, IDW – inverse distance weighted concentrations (3 monitors within 50 km of a residential postal code).