

Tiny but Mighty: Association between fine particulate matter (PM_{2.5}) and infant mortality in a North Carolina Birth Cohort (2003-2015)

Supplementary Material:

Table S1: Descriptive statistics of characteristics of analytical dataset

Table S2: Descriptive statistics of PM_{2.5} by year in analytical dataset and analytical sample

Table S3: Full results from logistic regression on analytical sample per 4.0 µg/m³ increase in PM_{2.5}

Table S4: Model specification on analytical sample per 4.0 µg/m³ increase in PM_{2.5} on pregnancy exposure window

Figure S1: Flowchart for creation of analytical dataset with inclusion and exclusion criteria:

Figure S2: Descriptive boxplot of PM_{2.5} by mortality category for analytical sample

Figure S3: Descriptive boxplots of PM_{2.5} by year and quarter in analytical dataset and analytical sample

Figure S4: Results for all infant, neonatal, and postneonatal mortality from logistic regression sample per 4.0 µg/m³ increase in PM_{2.5}

Supplemental Table S1: Descriptive statistics of characteristics of analytical dataset: This table displays birthing parent, infant, and community level characteristics of the analytical dataset (N = 1315691), sampled non-cases (controls) (n = 6000), unsampled non-cases (n = 1255691), all non-cases (n = 1309699), neonatal deaths (n = 3532), postneonatal deaths (n = 52460), and all infant deaths (n = 5992). ¹ P-value compares unsampled non-cases to sampled non-cases. ² 2-sample t-test performed for continuous variables and chi-squared test performed for categorical variables. ² High school (HS). ³ Race/ethnicity self-reported by birthing parent on birth certificate with ability to choose one of the categories. ⁴ Non-hispanic (NH). ⁵ Smoking any number of cigarettes during any time period of pregnancy. ⁶ Diabetes includes pre-pregnancy or gestational diabetes. ⁵ Urbanicity is based on 2010 Rural-Urban Commuting Area (RUCA) codes from the US Department of Agriculture (“USDA ERS - Rural-Urban Commuting Area Codes”, 2023). ⁷ Neighborhood Deprivation Index (NDI) uses eight previously identified socio-demographic variables representing five domains - poverty, housing, employment, occupation, and education from the 2013-2017 American Community Survey (ACS) at the census tract (Messer et al. 2006).

	Non - Cases				Cases		
Total Analytical Dataset	Sampled Non-Cases (Controls)	Unsampled Non-Cases	P-Value ¹	All Non-Cases	Neonatal Mortality	Postneonatal Mortality	All Infant Mortality
(N=1315691)	(n=60000)	(n=1255691)		(n=1309699)	(n=3532)	(n=2460)	(n=5992)

Birthing Parent Characteristics

Age (years)

0.098

15-19	126744 (9.6%)	5751 (9.6%)	121028 (9.6%)	125876 (9.6%)	502 (14.2%)	366 (14.9%)	868 (14.5%)
20-24	339608 (25.8%)	15491 (25.8%)	324048 (25.8%)	337767 (25.8%)	982 (27.8%)	859 (34.9%)	1841 (30.7%)
25-34	676619 (51.4%)	30804 (51.3%)	645756 (51.4%)	674084 (51.5%)	1547 (43.8%)	988 (40.2%)	2535 (42.3%)
35-39	143052 (10.9%)	6673 (11.1%)	136549 (10.9%)	142503 (10.9%)	370 (10.5%)	179 (7.3%)	549 (9.2%)
40-50	29668 (2.3%)	1281 (2.1%)	28310 (2.3%)	29469 (2.3%)	131 (3.7%)	68 (2.8%)	199 (3.3%)

Education

0.633

>HS ²	714540 (54.3%)	32539 (54.2%)	681999 (54.3%)	712154 (54.4%)	1488 (42.1%)	898 (36.5%)	2386 (39.8%)
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HS ²	338576 (25.7%)	15444 (25.7%)	323075 (25.7%)	336657 (25.7%)	1105 (31.3%)	814 (33.1%)	1919 (32.0%)
<HS ²	258534 (19.7%)	11816 (19.7%)	246755 (19.7%)	256897 (19.6%)	899 (25.5%)	738 (30.0%)	1637 (27.3%)
Missing	4041 (0.3%)	201 (0.3%)	3862 (0.3%)	3991 (0.3%)	40 (1.1%)	10 (0.4%)	50 (0.8%)
Race/ Ethnicity ³				0.668			
White NH ⁴	749980 (57.0%)	34144 (56.9%)	715625 (57.0%)	747231 (57.1%)	1606 (45.5%)	1143 (46.5%)	2749 (45.9%)
Black NH ⁴	301369 (22.9%)	13732 (22.9%)	287796 (22.9%)	299125 (22.8%)	1280 (36.2%)	964 (39.2%)	2244 (37.5%)
Hispanic	201019 (15.3%)	9260 (15.4%)	191820 (15.3%)	200286 (15.3%)	488 (13.8%)	245 (10.0%)	733 (12.2%)
Asian/Pacific Islander NH ⁴	45501 (3.5%)	2058 (3.4%)	43427 (3.5%)	45358 (3.5%)	91 (2.6%)	52 (2.1%)	143 (2.4%)
American Indian NH ⁴	15525 (1.2%)	715 (1.2%)	14832 (1.2%)	15415 (1.2%)	59 (1.7%)	51 (2.1%)	110 (1.8%)
Other/Unknown	2297 (0.2%)	91 (0.2%)	2191 (0.2%)	2284 (0.2%)	8 (0.2%)	5 (0.2%)	13 (0.2%)
Smoke ⁵				0.882			
No	1172626 (89.1%)	53461 (89.1%)	1119022 (89.1%)	1167791 (89.2%)	2972 (84.1%)	1863 (75.7%)	4835 (80.7%)
Yes	139061 (10.6%)	6350 (10.6%)	132846 (10.6%)	137964 (10.5%)	514 (14.6%)	583 (23.7%)	1097 (18.3%)
Missing	4004 (0.3%)	189 (0.3%)	3823 (0.3%)	3944 (0.3%)	46 (1.3%)	14 (0.6%)	60 (1.0%)
Diabetes ⁶				0.289			
No	1256771 (95.5%)	57252 (95.4%)	1199398 (95.5%)	1251064 (95.5%)	3367 (95.3%)	2340 (95.1%)	5707 (95.2%)
Yes	56946 (4.3%)	2647 (4.4%)	54407 (4.3%)	56677 (4.3%)	154 (4.4%)	115 (4.7%)	269 (4.5%)

<i>Missing</i>	1974 (0.2%)	101 (0.2%)	1886 (0.2%)	1958 (0.1%)	11 (0.3%)	5 (0.2%)	16 (0.3%)
Prenatal Care in First Trimester				0.671			
No	282788 (21.5%)	12952 (21.6%)	270070 (21.5%)	281158 (21.5%)	875 (24.8%)	755 (30.7%)	1630 (27.2%)
Yes	1018654 (77.4%)	46416 (77.4%)	972023 (77.4%)	1014456 (77.5%)	2548 (72.1%)	1650 (67.1%)	4198 (70.1%)
<i>Missing</i>	14249 (1.1%)	632 (1.1%)	13598 (1.1%)	14085 (1.1%)	109 (3.1%)	55 (2.2%)	164 (2.7%)
Medicaid				0.454			
No	659864 (50.2%)	30002 (50.0%)	629478 (50.1%)	657675 (50.2%)	1443 (40.9%)	746 (30.3%)	2189 (36.5%)
Yes	655827 (49.8%)	29998 (50.0%)	626213 (49.9%)	652024 (49.8%)	2089 (59.1%)	1714 (69.7%)	3803 (63.5%)
Marital Status				0.33			
Married	798703 (60.7%)	36427 (60.7%)	762010 (60.7%)	796008 (60.8%)	1647 (46.6%)	1048 (42.6%)	2695 (45.0%)
Unmarried	516502 (39.3%)	23544 (39.2%)	493217 (39.3%)	513214 (39.2%)	1878 (53.2%)	1410 (57.3%)	3288 (54.9%)
<i>Missing</i>	486 (0.0%)	29 (0.0%)	464 (0.0%)	477 (0.0%)	7 (0.2%)	2 (0.1%)	9 (0.2%)
Parity Levels				0.961			
0	543984 (41.3%)	24777 (41.3%)	519194 (41.3%)	541530 (41.3%)	1591 (45.0%)	863 (35.1%)	2454 (41.0%)
1	427573 (32.5%)	19587 (32.6%)	407891 (32.5%)	425888 (32.5%)	919 (26.0%)	766 (31.1%)	1685 (28.1%)
2	212265 (16.1%)	9656 (16.1%)	202700 (16.1%)	211269 (16.1%)	544 (15.4%)	452 (18.4%)	996 (16.6%)
3+	131284 (10.0%)	5952 (9.9%)	125345 (10.0%)	130437 (10.0%)	468 (13.3%)	379 (15.4%)	847 (14.1%)

<i>Missing</i>	585 (0.0%)	28 (0.0%)	561 (0.0%)	575 (0.0%)	10 (0.3%)	0 (0%)	10 (0.2%)
Infant Characteristics							
Infant Sex	0.412						
Female	642306 (48.8%)	29148 (48.6%)	613049 (48.8%)	639829 (48.9%)	1421 (40.2%)	1056 (42.9%)	2477 (41.3%)
Male	673378 (51.2%)	30852 (51.4%)	642635 (51.2%)	669867 (51.1%)	2107 (59.7%)	1404 (57.1%)	3511 (58.6%)
<i>Missing</i>	7 (0.0%)	0 (0%)	7 (0.0%)	3 (0.0%)	4 (0.1%)	0 (0%)	4 (0.1%)
Birthweight (grams)	0.00142						
Mean (SD)	3300 (576)	3310 (565)	3300 (576)	3310 (565)	1640 (1090)	2540 (1010)	2010 (1150)
Median [Min, Max]	3340 [500, 6290]	3350 [510, 5900]	3340 [500, 6290]	3350 [500, 6290]	1280 [500, 5610]	2810 [500, 5100]	2100 [500, 5610]
Low Birthweight (<2500 g)	0.0185						
No	1223854 (93.0%)	55956 (93.3%)	1167839 (93.0%)	1221405 (93.3%)	926 (26.2%)	1523 (61.9%)	2449 (40.9%)
Yes	91837 (7.0%)	4044 (6.7%)	87852 (7.0%)	88294 (6.7%)	2606 (73.8%)	937 (38.1%)	3543 (59.1%)
Preterm Birth (<37 weeks)	0.0192						
No	1202927 (91.4%)	55015 (91.7%)	1147950 (91.4%)	1200390 (91.7%)	995 (28.2%)	1542 (62.7%)	2537 (42.3%)
Yes	112764 (8.6%)	4985 (8.3%)	107741 (8.6%)	109309 (8.3%)	2537 (71.8%)	918 (37.3%)	3455 (57.7%)
Chromosomal Defects	<0.001						

No	1312775 (99.8%)	59918 (99.9%)	1252873 (99.8%)	1307333 (99.8%)	3211 (90.9%)	2231 (90.7%)	5442 (90.8%)
Yes	2916 (0.2%)	82 (0.1%)	2818 (0.2%)	2366 (0.2%)	321 (9.1%)	229 (9.3%)	550 (9.2%)
Cause of Death							
Certain conditions originating in perinatal period (P000-P969)	2048 (0.2%)	-	-	-	1897 (53.7%)	151 (6.1%)	2048 (34.2%)
Certain infectious and parasitic diseases (A021-A86; B004-B99)	155 (0.0%)	-	-	-	28 (0.8%)	127 (5.2%)	155 (2.6%)
Congenital malformations (Q000-Q999)	1608 (0.1%)	-	-	-	1110 (31.4%)	498 (20.2%)	1608 (26.8%)
Disease of genitourinary system (N049-N883)	29 (0.0%)	-	-	-	17 (0.5%)	12 (0.5%)	29 (0.5%)
Diseases of circulatory system (I10-I99)	217 (0.0%)	-	-	-	49 (1.4%)	168 (6.8%)	217 (3.6%)
Diseases of digestive system (K219-K929)	135 (0.0%)	-	-	-	21 (0.6%)	114 (4.6%)	135 (2.3%)
Diseases of musculoskeletal system (M622-M729)	2 (0.0%)	-	-	-	1 (0.0%)	1 (0.0%)	2 (0.0%)
Diseases of nervous system (G002-G98)	91 (0.0%)	-	-	-	18 (0.5%)	73 (3.0%)	91 (1.5%)
Diseases of respiratory system (J041-J989)	159 (0.0%)	-	-	-	10 (0.3%)	149 (6.1%)	159 (2.7%)
Endocrine, nutritional and metabolic (E39-E889)	58 (0.0%)	-	-	-	27 (0.8%)	31 (1.3%)	58 (1.0%)

Mental, behavioral, neurodevelopmental (F179)	1 (0.0%)	-	-	-	0 (0%)	1 (0.0%)	1 (0.0%)
Neoplasms (C222-C950; D151-D899)	62 (0.0%)	-	-	-	22 (0.6%)	40 (1.6%)	62 (1.0%)
SIDS (R95)	590 (0.0%)	-	-	-	63 (1.8%)	527 (21.4%)	590 (9.8%)
Symptoms, signs, and abnormal clinical and lab findings (R048-R99) but not SIDS (R95)	518 (0.0%)	-	-	-	93 (2.6%)	425 (17.3%)	518 (8.6%)
<i>Missing</i>	1310018 (99.6%)	6000 (100%)	1255691 (100%)	1309699 (100%)	176 (5.0%)	143 (5.8%)	319 (5.3%)
Month of birth	0.296						
1	108621 (8.3%)	4946 (8.2%)	103668 (8.3%)	108132 (8.3%)	269 (7.6%)	220 (8.9%)	489 (8.2%)
2	100164 (7.6%)	4581 (7.6%)	95644 (7.6%)	99717 (7.6%)	257 (7.3%)	190 (7.7%)	447 (7.5%)
3	108488 (8.2%)	4867 (8.1%)	103545 (8.2%)	107971 (8.2%)	291 (8.2%)	226 (9.2%)	517 (8.6%)
4	104231 (7.9%)	4811 (8.0%)	99505 (7.9%)	103764 (7.9%)	271 (7.7%)	196 (8.0%)	467 (7.8%)
5	107787 (8.2%)	4961 (8.3%)	102904 (8.2%)	107293 (8.2%)	306 (8.7%)	188 (7.6%)	494 (8.2%)
6	107989 (8.2%)	4945 (8.2%)	103048 (8.2%)	107489 (8.2%)	297 (8.4%)	203 (8.3%)	500 (8.3%)
7	114826 (8.7%)	5175 (8.6%)	109607 (8.7%)	114319 (8.7%)	302 (8.6%)	205 (8.3%)	507 (8.5%)
8	117509 (8.9%)	5501 (9.2%)	112130 (8.9%)	116977 (8.9%)	324 (9.2%)	208 (8.5%)	532 (8.9%)
9	115299 (8.8%)	5310 (8.9%)	109959 (8.8%)	114823 (8.8%)	280 (7.9%)	196 (8.0%)	476 (7.9%)

10	112588 (8.6%)	5046 (8.4%)	107416 (8.6%)	112026 (8.6%)	332 (9.4%)	230 (9.3%)	562 (9.4%)
11	107054 (8.1%)	4759 (7.9%)	102148 (8.1%)	106540 (8.1%)	308 (8.7%)	206 (8.4%)	514 (8.6%)
12	111135 (8.4%)	5098 (8.5%)	106117 (8.5%)	110648 (8.4%)	295 (8.4%)	192 (7.8%)	487 (8.1%)
Season of birth				0.464			
Winter	319920 (24.3%)	14625 (24.4%)	305429 (24.3%)	318497 (24.3%)	821 (23.2%)	602 (24.5%)	1423 (23.7%)
Fall	334941 (25.5%)	15115 (25.2%)	319523 (25.4%)	333389 (25.5%)	920 (26.0%)	632 (25.7%)	1552 (25.9%)
Spring	320506 (24.4%)	14639 (24.4%)	305954 (24.4%)	319028 (24.4%)	868 (24.6%)	610 (24.8%)	1478 (24.7%)
Summer	340324 (25.9%)	15621 (26.0%)	324785 (25.9%)	338785 (25.9%)	923 (26.1%)	616 (25.0%)	1539 (25.7%)
Year of birth				0.265			
2003	100081 (7.6%)	4638 (7.7%)	95484 (7.6%)	99593 (7.6%)	307 (8.7%)	181 (7.4%)	488 (8.1%)
2004	102283 (7.8%)	4729 (7.9%)	97649 (7.8%)	101786 (7.8%)	301 (8.5%)	196 (8.0%)	497 (8.3%)
2005	105535 (8.0%)	4825 (8.0%)	100712 (8.0%)	105010 (8.0%)	325 (9.2%)	200 (8.1%)	525 (8.8%)
2006	109859 (8.4%)	5031 (8.4%)	104875 (8.4%)	109347 (8.3%)	307 (8.7%)	205 (8.3%)	512 (8.5%)
2007	113274 (8.6%)	5055 (8.4%)	108073 (8.6%)	112715 (8.6%)	320 (9.1%)	239 (9.7%)	559 (9.3%)
2008	113720 (8.6%)	5280 (8.8%)	108496 (8.6%)	113173 (8.6%)	301 (8.5%)	246 (10.0%)	547 (9.1%)
2009	110993 (8.4%)	5099 (8.5%)	105986 (8.4%)	110480 (8.4%)	296 (8.4%)	217 (8.8%)	513 (8.6%)
2011	112057 (8.5%)	5153 (8.6%)	107100 (8.5%)	111610 (8.5%)	253 (7.2%)	194 (7.9%)	447 (7.5%)

2012	111762 (8.5%)	4958 (8.3%)	106653 (8.5%)	111295 (8.5%)	276 (7.8%)	191 (7.8%)	467 (7.8%)
2013	110794 (8.4%)	5081 (8.5%)	105726 (8.4%)	110322 (8.4%)	292 (8.3%)	180 (7.3%)	472 (7.9%)
2014	112717 (8.6%)	5112 (8.5%)	107459 (8.6%)	112243 (8.6%)	276 (7.8%)	198 (8.0%)	474 (7.9%)
2015	112616 (8.6%)	5039 (8.4%)	107478 (8.6%)	112125 (8.6%)	278 (7.9%)	213 (8.7%)	491 (8.2%)

Month of death

1	465 (0.0%)	-	-	-	257 (7.3%)	208 (8.5%)	465 (7.8%)
2	455 (0.0%)	-	-	-	247 (7.0%)	208 (8.5%)	455 (7.6%)
3	507 (0.0%)	-	-	-	301 (8.5%)	206 (8.4%)	507 (8.5%)
4	486 (0.0%)	-	-	-	274 (7.8%)	212 (8.6%)	486 (8.1%)
5	519 (0.0%)	-	-	-	301 (8.5%)	218 (8.9%)	519 (8.7%)
6	501 (0.0%)	-	-	-	301 (8.5%)	200 (8.1%)	501 (8.4%)
7	498 (0.0%)	-	-	-	301 (8.5%)	197 (8.0%)	498 (8.3%)
8	494 (0.0%)	-	-	-	311 (8.8%)	183 (7.4%)	494 (8.2%)
9	474 (0.0%)	-	-	-	286 (8.1%)	188 (7.6%)	474 (7.9%)
10	534 (0.0%)	-	-	-	326 (9.2%)	208 (8.5%)	534 (8.9%)
11	537 (0.0%)	-	-	-	322 (9.1%)	215 (8.7%)	537 (9.0%)
12	522 (0.0%)	-	-	-	305 (8.6%)	217 (8.8%)	522 (8.7%)

Missing	1309699 (99.5%)	6000 (100%)	1255691 (100%)	1309699 (100%)	0 (0%)	0 (0%)	0 (0%)
Season of death							
Winter	1442 (0.1%)	-	-	-	809 (22.9%)	633 (25.7%)	1442 (24.1%)
Fall	1545 (0.1%)	-	-	-	934 (26.4%)	611 (24.8%)	1545 (25.8%)
Spring	1512 (0.1%)	-	-	-	876 (24.8%)	636 (25.9%)	1512 (25.2%)
Summer	1493 (0.1%)	-	-	-	913 (25.8%)	580 (23.6%)	1493 (24.9%)
<i>Missing</i>	1309699 (99.5%)	6000 (100%)	1255691 (100%)	1309699 (100%)	0 (0%)	0 (0%)	0 (0%)
Year of death							
2003	428 (0.0%)	-	-	-	303 (8.6%)	125 (5.1%)	428 (7.1%)
2004	496 (0.0%)	-	-	-	301 (8.5%)	195 (7.9%)	496 (8.3%)
2005	525 (0.0%)	-	-	-	326 (9.2%)	199 (8.1%)	525 (8.8%)
2006	489 (0.0%)	-	-	-	301 (8.5%)	188 (7.6%)	489 (8.2%)
2007	564 (0.0%)	-	-	-	328 (9.3%)	236 (9.6%)	564 (9.4%)
2008	556 (0.0%)	-	-	-	300 (8.5%)	256 (10.4%)	556 (9.3%)
2009	531 (0.0%)	-	-	-	297 (8.4%)	234 (9.5%)	531 (8.9%)
2010	52 (0.0%)	-	-	-	1 (0.0%)	51 (2.1%)	52 (0.9%)
2011	382 (0.0%)	-	-	-	250 (7.1%)	132 (5.4%)	382 (6.4%)

2012	479 (0.0%)	-	-	-	277 (7.8%)	202 (8.2%)	479 (8.0%)
2013	448 (0.0%)	-	-	-	290 (8.2%)	158 (6.4%)	448 (7.5%)
2014	479 (0.0%)	-	-	-	277 (7.8%)	202 (8.2%)	479 (8.0%)
2015	491 (0.0%)	-	-	-	277 (7.8%)	214 (8.7%)	491 (8.2%)
2016	72 (0.0%)	-	-	-	4 (0.1%)	68 (2.8%)	72 (1.2%)
<i>Missing</i>	1309699 (99.5%)	6000 (100%)	1255691 (100%)	1309699 (100%)	0 (0%)	0 (0%)	0 (0%)

Community Level Characteristics

Urbanicity ⁷	0.685						
Metropolitan	1052913 (80.0%)	47966 (79.9%)	1004947 (80.0%)	1048343 (80.0%)	2702 (76.5%)	1868 (75.9%)	4570 (76.3%)
Micropolitan	182309 (13.9%)	8393 (14.0%)	173916 (13.9%)	181314 (13.8%)	580 (16.4%)	415 (16.9%)	995 (16.6%)
Small Town	54395 (4.1%)	2433 (4.1%)	51962 (4.1%)	54093 (4.1%)	182 (5.2%)	120 (4.9%)	302 (5.0%)
Rural	26047 (2.0%)	1205 (2.0%)	24842 (2.0%)	25922 (2.0%)	68 (1.9%)	57 (2.3%)	125 (2.1%)
<i>Missing</i>	27 (0.0%)	3 (0.0%)	24 (0.0%)	27 (0.0%)	0 (0%)	0 (0%)	0 (0%)
NDI ⁸	0.062						
Mean (SD)	0.07 (0.99)	0.08 (0.99)	0.07 (0.99)	0.07 (0.99)	0.28 (0.99)	0.39 (1.00)	0.33 (0.99)
Median [Min, Max]	-0.01 [-2.00, 4.39]	-0.00 [-2.00, 4.39]	-0.01 [-2.00, 4.39]	-0.01 [-2.00, 4.39]	0.19 [-1.94, 4.39]	0.28 [-1.94, 3.56]	0.22 [-1.94, 4.39]
<i>Missing</i>	24 (0.0%)	2 (0.0%)	22 (0.0%)	24 (0.0%)	0 (0%)	0 (0%)	0 (0%)

Number of Census Blocks							
Count	137865	36141	136494	137771	3284	2340	5394
<i>Missing</i>	24 (0.0%)	2 (0.0%)	22 (0.0%)	24 (0.0%)	0 (0%)	0 (0%)	0 (0%)

Supplemental Table S2: Descriptive Statistics of PM_{2.5} by year in analytical dataset and analytical sample: Estimates are reported for full pregnancy exposure. ¹ Proportion is the death count divided by the total in the analytical dataset or the analytical sample. ² Standard deviation (SD). ³ Interquartile range (IQR).

Year	Non-NA Count / Total	Deaths	Proportion ¹	Mean (SD) ²	Median	IQR ³	Range	Proportion < 8 µg/m ³	Proportion < 10 µg/m ³	Proportion < 12 µg/m ³
Full Pregnancy Exposure: Analytical Dataset										
2003	100080 / 100081	488	0.0049	12.5 (1.5)	12.6	11.5 - 13.6	7.2 - 17.0	0.0	0.0	0.4
2004	102280 / 102283	497	0.0049	12.6 (1.5)	12.6	11.6 - 13.7	7.2 - 17.9	0.0	0.0	0.3
2005	105532 / 105535	525	0.0050	12.9 (1.5)	12.9	11.9 - 14.0	7.7 - 19.0	0.0	0.0	0.3
2006	109859 / 109859	512	0.0047	13.0 (1.5)	13.1	11.9 - 14.1	7.2 - 18.3	0.0	0.0	0.3
2007	113273 / 113274	559	0.0049	12.3 (1.7)	12.5	11.0 - 13.7	6.6 - 17.7	0.0	0.1	0.4
2008	113719 / 113720	547	0.0048	11.8 (1.4)	11.8	10.8 - 12.7	6.7 - 16.4	0.0	0.1	0.6
2009	110989 / 110993	513	0.0046	9.8 (1.2)	9.7	8.9 - 10.5	5.9 - 14.3	0.1	0.6	0.9
2011	112053 / 112057	447	0.0040	9.8 (0.9)	9.8	9.2 - 10.4	5.7 - 13.2	0.0	0.6	1.0
2012	111761 / 111762	467	0.0042	8.4 (1.0)	8.4	7.7 - 9.1	4.9 - 12.1	0.3	1.0	1.0
2013	110790 / 110794	472	0.0043	8.0 (0.7)	8.1	7.5 - 8.5	5.2 - 10.6	0.5	1.0	1.0
2014	112716 / 112717	474	0.0042	8.3 (0.7)	8.4	7.8 - 8.8	5.2 - 10.9	0.3	1.0	1.0
2015	112615 / 112616	491	0.0044	7.8 (0.7)	7.8	7.3 - 8.3	4.7 - 10.8	0.6	1.0	1.0

Full Pregnancy Exposure: Analytical Sample

2003	5021 / 5021	488	0.0972	12.5 (1.5)	12.6	11.5 - 13.6	7.5 - 16.8	0.0	0.0	0.4
2004	5189 / 5189	497	0.0958	12.6 (1.6)	12.7	11.6 - 13.7	7.5 - 17.6	0.0	0.1	0.3
2005	5434 / 5434	525	0.0966	12.9 (1.5)	12.9	11.8 - 14.1	8.5 - 18.6	0.0	0.0	0.3
2006	5508 / 5508	512	0.0930	13.0 (1.6)	13.1	11.8 - 14.2	7.8 - 17.9	0.0	0.0	0.3
2007	5667 / 5668	559	0.0986	12.3 (1.8)	12.5	11.0 - 13.7	7.3 - 17.6	0.0	0.1	0.4
2008	5768 / 5768	547	0.0948	11.8 (1.4)	11.8	10.8 - 12.7	7.3 - 16.0	0.0	0.1	0.6
2009	5664 / 5664	513	0.0906	9.7 (1.2)	9.6	8.9 - 10.4	6.4 - 13.8	0.1	0.6	1.0
2011	5547 / 5548	447	0.0806	9.7 (0.9)	9.8	9.1 - 10.4	6.7 - 13.0	0.0	0.6	1.0
2012	5460 / 5460	467	0.0855	8.4 (1.0)	8.4	7.7 - 9.0	5.3 - 11.7	0.3	1.0	1.0
2013	5518 / 5518	472	0.0855	8.0 (0.7)	8.1	7.5 - 8.5	5.2 - 10.2	0.5	1.0	1.0
2014	5585 / 5585	474	0.0849	8.3 (0.7)	8.4	7.8 - 8.8	5.5 - 10.5	0.3	1.0	1.0
2015	5629 / 5629	491	0.0872	7.8 (0.7)	7.8	7.3 - 8.3	5.2 - 9.9	0.6	1.0	1.0

Supplemental Table S3: Full results from logistic regression on analytical sample per 4.0 µg/m³ increase in PM_{2.5}: This table presents results from the logistic regression of all critical exposure periods (Trimester 1, 2, 3, Pregnancy, and Month 1) for all infant mortality, postneonatal infant mortality, and neonatal mortality. Partially adjusted model includes individual level covariates only (birthing parent and infant characteristics). Fully adjusted model additionally includes community level characteristics. There are fewer cases for all infant mortality in the month 1 exposure period compared to the full pregnancy because only infants who lived for 11 days or more were included in the analysis. Threshold analysis subsetted the data to only exposures less than the thresholds (<8 µg/m³, <10 µg/m³, <12 µg/m³) and then ran a continuous logistic regression on this subset. Sex analysis is stratified by sex assigned at birth. Race analysis stratified by race self-reported on the birth certificate with six choices but results from Other/Unknown are not included due to low counts. Full term analysis restricted to only full term births defined as greater than or equal to 37 weeks. Cause of death analysis restricted to infants whose cause of death was attributed to Sudden Infant Death Syndrome (SIDS) (ICD10: R95) and separately Respiratory death which included Diseases of the Respiratory System (ICD10: J000-99) and Bronchopulmonary dysplasia (BPD) (ICD10: P27.1). Confidence Interval (CI). Non-Hispanic (NH).

Period	Death	PM2.5 Level	Sex	Race	Term	use of De	Unadjusted Model			Partially Adjusted Model			Fully Adjusted Model		
							Estimate (95% CI)	P-value	Cases/Observations	Estimate (95% CI)	P-value	Cases/Observations	Estimate (95% CI)	P-value	Cases/Observations
Master Analysis															
Trimester 1	All	All	All	All	All	All	1.07 (1.03, 1.10)	0.00	5992 / 65990	1.01 (0.96, 1.06)	0.70	5741 / 64788	1.01 (0.97, 1.06)	0.61	5741 / 64787
Trimester 1	Neonatal	All	All	All	All	All	1.06 (1.02, 1.11)	0.01	3532 / 63530	0.99 (0.93, 1.05)	0.76	3368 / 62415	1.00 (0.94, 1.06)	0.93	3368 / 62414
Trimester 1	Postneonatal	All	All	All	All	All	1.07 (1.01, 1.13)	0.01	2460 / 62458	1.03 (0.96, 1.11)	0.37	2373 / 61420	1.03 (0.96, 1.11)	0.40	2373 / 61419
Trimester 2	All	All	All	All	All	All	1.07 (1.03, 1.11)	0.00	5992 / 65990	1.01 (0.96, 1.06)	0.79	5741 / 64788	1.01 (0.96, 1.06)	0.73	5741 / 64787
Trimester 2	Neonatal	All	All	All	All	All	1.08 (1.03, 1.13)	0.00	3532 / 63530	0.99 (0.93, 1.06)	0.75	3368 / 62415	1.00 (0.93, 1.06)	0.89	3368 / 62414
Trimester 2	Postneonatal	All	All	All	All	All	1.07 (1.01, 1.12)	0.02	2460 / 62458	1.03 (0.95, 1.11)	0.43	2373 / 61420	1.03 (0.95, 1.11)	0.47	2373 / 61419
Trimester 3	All	All	All	All	All	All	1.01 (0.97, 1.06)	0.52	4079 / 63856	1.00 (0.94, 1.06)	0.97	3935 / 62770	0.99 (0.93, 1.06)	0.88	3935 / 62769
Trimester 3	Neonatal	All	All	All	All	All	1.04 (0.98, 1.11)	0.19	1961 / 61738	1.01 (0.93, 1.11)	0.76	1892 / 60727	1.01 (0.92, 1.11)	0.85	1892 / 60726
Trimester 3	Postneonatal	All	All	All	All	All	0.99 (0.93, 1.05)	0.72	2118 / 61895	0.98 (0.90, 1.07)	0.70	2043 / 60878	0.98 (0.90, 1.07)	0.67	2043 / 60877
Full pregnancy	All	All	All	All	All	All	1.12 (1.06, 1.17)	0.00	5992 / 65990	1.04 (0.95, 1.15)	0.40	5741 / 64788	1.05 (0.95, 1.17)	0.30	5741 / 64787
Full pregnancy	Neonatal	All	All	All	All	All	1.13 (1.06, 1.20)	0.00	3532 / 63530	1.01 (0.88, 1.15)	0.93	3368 / 62415	1.03 (0.90, 1.18)	0.69	3368 / 62414
Full pregnancy	Postneonatal	All	All	All	All	All	1.10 (1.03, 1.18)	0.01	2460 / 62458	1.09 (0.95, 1.26)	0.22	2373 / 61420	1.09 (0.94, 1.27)	0.24	2373 / 61419
Month 1	All	All	All	All	All	All	1.04 (1.00, 1.08)	0.06	3336 / 63334	0.99 (0.94, 1.05)	0.71	3221 / 62268	0.99 (0.94, 1.04)	0.68	3221 / 62267
Month 1	Neonatal	All	All	All	All	All	1.07 (0.99, 1.16)	0.07	876 / 60874	0.95 (0.86, 1.06)	0.34	848 / 59895	0.95 (0.86, 1.06)	0.36	848 / 59894
Month 1	Postneonatal	All	All	All	All	All	1.03 (0.98, 1.08)	0.23	2460 / 62458	1.01 (0.94, 1.07)	0.85	2373 / 61420	1.00 (0.94, 1.07)	0.90	2373 / 61419

Threshold															
Trimester 1	All	<8 mg/m3	All	All	All	All	0.92 (0.60, 1.42)	0.71	1024 / 12491	0.81 (0.51, 1.29)	0.37	984 / 12199	0.86 (0.53, 1.40)	0.54	984 / 12199
Trimester 1	Neonatal	<8 mg/m3	All	All	All	All	0.93 (0.53, 1.64)	0.81	602 / 12069	0.81 (0.44, 1.49)	0.50	578 / 11793	0.83 (0.44, 1.56)	0.56	578 / 11793
Trimester 1	Postneonatal	<8 mg/m3	All	All	All	All	0.90 (0.48, 1.70)	0.75	422 / 11889	0.78 (0.40, 1.53)	0.47	406 / 11621	0.87 (0.43, 1.77)	0.70	406 / 11621
Trimester 2	All	<8 mg/m3	All	All	All	All	0.58 (0.38, 0.89)	0.01	1108 / 12617	0.47 (0.30, 0.73)	0.00	1051 / 12310	0.48 (0.30, 0.76)	0.00	1051 / 12310
Trimester 2	Neonatal	<8 mg/m3	All	All	All	All	0.46 (0.27, 0.77)	0.00	663 / 12172	0.34 (0.19, 0.59)	0.00	622 / 11881	0.33 (0.19, 0.59)	0.00	622 / 11881
Trimester 2	Postneonatal	<8 mg/m3	All	All	All	All	0.84 (0.43, 1.65)	0.61	445 / 11954	0.76 (0.37, 1.57)	0.46	429 / 11688	0.82 (0.39, 1.71)	0.59	429 / 11688
Trimester 3	All	<8 mg/m3	All	All	All	All	0.58 (0.39, 0.88)	0.01	925 / 13928	0.57 (0.36, 0.88)	0.01	876 / 13606	0.54 (0.34, 0.85)	0.01	876 / 13606
Trimester 3	Neonatal	<8 mg/m3	All	All	All	All	0.56 (0.31, 1.00)	0.05	432 / 13435	0.48 (0.25, 0.91)	0.02	406 / 13136	0.43 (0.23, 0.83)	0.01	406 / 13136
Trimester 3	Postneonatal	<8 mg/m3	All	All	All	All	0.61 (0.35, 1.05)	0.08	493 / 13496	0.65 (0.36, 1.19)	0.16	470 / 13200	0.65 (0.36, 1.19)	0.16	470 / 13200
Full pregnancy	All	<8 mg/m3	All	All	All	All	0.52 (0.30, 0.92)	0.02	876 / 10177	0.41 (0.22, 0.75)	0.00	831 / 9909	0.39 (0.21, 0.74)	0.00	831 / 9909
Full pregnancy	Neonatal	<8 mg/m3	All	All	All	All	0.42 (0.21, 0.85)	0.02	522 / 9823	0.29 (0.13, 0.62)	0.00	492 / 9570	0.25 (0.11, 0.55)	0.00	492 / 9570
Full pregnancy	Postneonatal	<8 mg/m3	All	All	All	All	0.74 (0.31, 1.76)	0.49	354 / 9655	0.71 (0.28, 1.79)	0.46	339 / 9417	0.79 (0.30, 2.10)	0.64	339 / 9417
Month 1	All	<8 mg/m3	All	All	All	All	0.84 (0.60, 1.17)	0.29	862 / 16856	0.88 (0.60, 1.29)	0.51	826 / 16506	0.87 (0.59, 1.28)	0.48	826 / 16506
Month 1	Neonatal	<8 mg/m3	All	All	All	All	0.66 (0.35, 1.26)	0.21	210 / 16204	0.68 (0.31, 1.46)	0.32	200 / 15880	0.65 (0.30, 1.44)	0.29	200 / 15880
Month 1	Postneonatal	<8 mg/m3	All	All	All	All	0.91 (0.62, 1.33)	0.61	652 / 16646	0.96 (0.61, 1.48)	0.84	626 / 16306	0.95 (0.61, 1.49)	0.82	626 / 16306
Trimester 1	All	<10 ug/m3	All	All	All	All	1.13 (0.97, 1.32)	0.61	2885 / 33139	1.00 (0.83, 1.20)	0.97	2747 / 32450	1.03 (0.86, 1.25)	0.73	2747 / 32450
Trimester 1	Neonatal	<10 ug/m3	All	All	All	All	1.17 (0.96, 1.42)	0.61	1715 / 31969	1.06 (0.84, 1.35)	0.61	1622 / 31325	1.14 (0.90, 1.46)	0.28	1622 / 31325
Trimester 1	Postneonatal	<10 ug/m3	All	All	All	All	1.07 (0.85, 1.35)	0.61	1170 / 31424	0.89 (0.68, 1.18)	0.43	1125 / 30828	0.88 (0.66, 1.18)	0.40	1125 / 30828
Trimester 2	All	<10 ug/m3	All	All	All	All	0.89 (0.77, 1.04)	0.61	2989 / 34319	0.75 (0.62, 0.90)	0.00	2852 / 33619	0.74 (0.61, 0.89)	0.00	2852 / 33619
Trimester 2	Neonatal	<10 ug/m3	All	All	All	All	0.83 (0.68, 1.00)	0.61	1761 / 33091	0.65 (0.52, 0.82)	0.00	1675 / 32442	0.65 (0.51, 0.83)	0.00	1675 / 32442
Trimester 2	Postneonatal	<10 ug/m3	All	All	All	All	1.00 (0.80, 1.27)	0.61	1228 / 32558	0.90 (0.68, 1.19)	0.46	1177 / 31944	0.89 (0.67, 1.18)	0.41	1177 / 31944
Trimester 3	All	<10 ug/m3	All	All	All	All	0.85 (0.72, 1.01)	0.61	2205 / 34554	0.72 (0.59, 0.87)	0.00	2107 / 33886	0.68 (0.56, 0.83)	0.00	2107 / 33886
Trimester 3	Neonatal	<10 ug/m3	All	All	All	All	0.91 (0.71, 1.16)	0.61	1051 / 33400	0.73 (0.55, 0.97)	0.03	1002 / 32781	0.68 (0.51, 0.91)	0.01	1002 / 32781
Trimester 3	Postneonatal	<10 ug/m3	All	All	All	All	0.80 (0.64, 1.01)	0.61	1154 / 33503	0.70 (0.54, 0.91)	0.01	1105 / 32884	0.68 (0.52, 0.89)	0.00	1105 / 32884
Full pregnancy	All	<10 ug/m3	All	All	All	All	1.17 (0.97, 1.40)	0.61	2741 / 30644	0.80 (0.63, 1.01)	0.06	2609 / 29989	0.78 (0.61, 1.00)	0.05	2609 / 29989
Full pregnancy	Neonatal	<10 ug/m3	All	All	All	All	1.13 (0.89, 1.43)	0.61	1630 / 29533	0.68 (0.50, 0.93)	0.01	1543 / 28923	0.66 (0.48, 0.92)	0.01	1543 / 28923
Full pregnancy	Postneonatal	<10 ug/m3	All	All	All	All	1.23 (0.93, 1.63)	0.61	1111 / 29014	0.99 (0.69, 1.41)	0.94	1066 / 28446	0.97 (0.67, 1.42)	0.88	1066 / 28446
Month 1	All	<10 ug/m3	All	All	All	All	0.94 (0.80, 1.10)	0.61	1798 / 35484	0.82 (0.69, 0.99)	0.04	1726 / 34819	0.82 (0.68, 0.99)	0.04	1726 / 34819
Month 1	Neonatal	<10 ug/m3	All	All	All	All	0.99 (0.72, 1.35)	0.61	458 / 34144	0.80 (0.56, 1.15)	0.22	442 / 33535	0.82 (0.57, 1.19)	0.30	442 / 33535
Month 1	Postneonatal	<10 ug/m3	All	All	All	All	0.93 (0.77, 1.11)	0.61	1340 / 35026	0.84 (0.68, 1.03)	0.09	1284 / 34377	0.83 (0.67, 1.03)	0.08	1284 / 34377
Trimester 1	All	<12 ug	All	All	All	All	1.14 (1.05, 1.24)	0.00	4237 / 47479	1.06 (0.94, 1.19)	0.35	4052 / 46566	1.07 (0.95, 1.20)	0.29	4052 / 46566
Trimester 1	Neonatal	<12 ug	All	All	All	All	1.14 (1.03, 1.27)	0.01	2503 / 45745	1.05 (0.90, 1.21)	0.54	2378 / 44892	1.07 (0.92, 1.24)	0.39	2378 / 44892
Trimester 1	Postneonatal	<12 ug	All	All	All	All	1.14 (1.00, 1.29)	0.05	1734 / 44976	1.07 (0.89, 1.28)	0.46	1674 / 44188	1.06 (0.88, 1.28)	0.51	1674 / 44188
Trimester 2	All	<12 ug	All	All	All	All	1.02 (0.93, 1.11)	0.69	4294 / 48614	0.84 (0.75, 0.95)	0.01	4098 / 47671	0.84 (0.74, 0.96)	0.01	4098 / 47671
Trimester 2	Neonatal	<12 ug	All	All	All	All	0.97 (0.87, 1.09)	0.63	2517 / 46837	0.76 (0.65, 0.89)	0.00	2393 / 45966	0.77 (0.65, 0.91)	0.00	2393 / 45966
Trimester 2	Postneonatal	<12 ug	All	All	All	All	1.08 (0.95, 1.23)	0.22	1777 / 46097	0.97 (0.81, 1.17)	0.78	1705 / 45278	0.96 (0.80, 1.16)	0.70	1705 / 45278
Trimester 3	All	<12 ug	All	All	All	All	0.93 (0.84, 1.03)	0.15	3019 / 47378	0.80 (0.69, 0.92)	0.00	2901 / 46527	0.77 (0.67, 0.89)	0.00	2901 / 46527
Trimester 3	Neonatal	<12 ug	All	All	All	All	0.93 (0.80, 1.06)	0.27	1431 / 45790	0.78 (0.63, 0.96)	0.02	1374 / 45000	0.75 (0.60, 0.92)	0.01	1374 / 45000
Trimester 3	Postneonatal	<12 ug	All	All	All	All	0.93 (0.82, 1.07)	0.32	1588 / 45947	0.81 (0.67, 0.98)	0.03	1527 / 45153	0.80 (0.65, 0.97)	0.02	1527 / 45153
Full pregnancy	All	<12 ug	All	All	All	All	1.05 (0.96, 1.14)	0.28	4072 / 45383	0.68 (0.58, 0.80)	0.00	3882 / 44481	0.66 (0.55, 0.78)	0.00	3882 / 44481
Full pregnancy	Neonatal	<12 ug	All	All	All	All	1.02 (0.91, 1.14)	0.77	2404 / 43715	0.55 (0.45, 0.68)	0.00	2282 / 42881	0.53 (0.43, 0.67)	0.00	2282 / 42881
Full pregnancy	Postneonatal	<12 ug	All	All	All	All	1.10 (0.96, 1.25)	0.17	1668 / 42979	0.90 (0.70, 1.15)	0.41	1600 / 42199	0.88 (0.68, 1.14)	0.34	1600 / 42199
Month 1	All	<12 ug	All	All	All	All	1.06 (0.96, 1.18)	0.23	2441 / 47100	0.92 (0.81, 1.04)	0.17	2350 / 46269	0.91 (0.80, 1.04)	0.17	2350 / 46269
Month 1	Neonatal	<12 ug	All	All	All	All	1.19 (0.98, 1.45)	0.08	641 / 45300	0.96 (0.75, 1.24)	0.75	619 / 44538	0.96 (0.74, 1.24)	0.76	619 / 44538
Month 1	Postneonatal	<12 ug	All	All	All	All	1.02 (0.91, 1.15)	0.73	1800 / 46459	0.90 (0.78, 1.04)	0.15	1731 / 45650	0.90 (0.77, 1.04)	0.16	1731 / 45650

Period	Death	PM2.5 Level	Sex	Race	Term	use of De	Unadjusted Model			Partially Adjusted Model			Fully Adjusted Model		
							Estimate (95% CI)	P-value	Cases/Observations	Estimate (95% CI)	P-value	Cases/Observations	Estimate (95% CI)	P-value	Cases/Observations
Sex															
Month 1	All	All	Female	All	All	All	1.01 (0.95, 1.07)	0.83	1423 / 30883	0.92 (0.84, 1.01)	0.07	1371 / 30362	0.92 (0.84, 1.01)	0.07	1371 / 30362
Month 1	All	All	Male	All	All	All	1.07 (1.01, 1.12)	0.02	1913 / 32450	1.04 (0.97, 1.11)	0.31	1850 / 31905	1.04 (0.97, 1.11)	0.31	1850 / 31905
Month 1	Neonatal	All	Female	All	All	All	1.02 (0.90, 1.16)	0.73	367 / 29827	0.91 (0.76, 1.09)	0.31	357 / 29348	0.91 (0.76, 1.09)	0.31	357 / 29348
Month 1	Neonatal	All	Male	All	All	All	1.11 (1.01, 1.22)	0.03	509 / 31046	0.98 (0.86, 1.11)	0.74	491 / 30546	0.98 (0.86, 1.11)	0.74	491 / 30546
Month 1	Postneonatal	All	Female	All	All	All	1.00 (0.93, 1.07)	0.97	1056 / 30516	0.93 (0.84, 1.02)	0.13	1014 / 30005	0.93 (0.84, 1.02)	0.13	1014 / 30005
Month 1	Postneonatal	All	Male	All	All	All	1.05 (0.99, 1.12)	0.12	1404 / 31941	1.06 (0.98, 1.16)	0.16	1359 / 31414	1.06 (0.98, 1.16)	0.16	1359 / 31414
Full pregnancy	All	All	Female	All	All	All	1.13 (1.05, 1.21)	0.00	2477 / 31937	1.07 (0.92, 1.26)	0.38	2374 / 31365	1.07 (0.92, 1.26)	0.38	2374 / 31365
Full pregnancy	All	All	Male	All	All	All	1.11 (1.04, 1.18)	0.00	3511 / 34048	1.04 (0.91, 1.19)	0.55	3367 / 33422	1.04 (0.91, 1.19)	0.55	3367 / 33422
Full pregnancy	Neonatal	All	Female	All	All	All	1.11 (1.01, 1.22)	0.03	1421 / 30881	1.05 (0.84, 1.30)	0.68	1360 / 30351	1.05 (0.84, 1.30)	0.68	1360 / 30351
Full pregnancy	Neonatal	All	Male	All	All	All	1.14 (1.06, 1.24)	0.00	2107 / 32644	1.02 (0.85, 1.22)	0.84	2008 / 32063	1.02 (0.85, 1.22)	0.84	2008 / 32063
Full pregnancy	Postneonatal	All	Female	All	All	All	1.15 (1.04, 1.28)	0.01	1056 / 30516	1.11 (0.88, 1.40)	0.36	1014 / 30005	1.11 (0.88, 1.40)	0.36	1014 / 30005
Full pregnancy	Postneonatal	All	Male	All	All	All	1.06 (0.97, 1.17)	0.20	1404 / 31941	1.08 (0.89, 1.32)	0.44	1359 / 31414	1.08 (0.89, 1.32)	0.44	1359 / 31414
Trimester 1	All	All	Female	All	All	All	1.10 (1.04, 1.16)	0.00	2477 / 31937	1.06 (0.99, 1.14)	0.12	2374 / 31365	1.06 (0.99, 1.14)	0.12	2374 / 31365
Trimester 1	All	All	Male	All	All	All	1.04 (1.00, 1.09)	0.06	3511 / 34048	0.98 (0.92, 1.04)	0.51	3367 / 33422	0.98 (0.92, 1.04)	0.51	3367 / 33422
Trimester 1	Neonatal	All	Female	All	All	All	1.08 (1.01, 1.16)	0.03	1421 / 30881	1.06 (0.96, 1.16)	0.26	1360 / 30351	1.06 (0.96, 1.16)	0.26	1360 / 30351
Trimester 1	Neonatal	All	Male	All	All	All	1.05 (1.00, 1.12)	0.07	2107 / 32644	0.96 (0.89, 1.04)	0.31	2008 / 32063	0.96 (0.89, 1.04)	0.31	2008 / 32063
Trimester 1	Postneonatal	All	Female	All	All	All	1.12 (1.04, 1.21)	0.00	1056 / 30516	1.06 (0.96, 1.19)	0.26	1014 / 30005	1.06 (0.96, 1.19)	0.26	1014 / 30005
Trimester 1	Postneonatal	All	Male	All	All	All	1.03 (0.96, 1.10)	0.41	1404 / 31941	1.01 (0.92, 1.11)	0.87	1359 / 31414	1.01 (0.92, 1.11)	0.87	1359 / 31414
Trimester 2	All	All	Female	All	All	All	1.06 (1.01, 1.12)	0.03	2477 / 31937	0.99 (0.91, 1.08)	0.84	2374 / 31365	0.99 (0.91, 1.08)	0.84	2374 / 31365
Trimester 2	All	All	Male	All	All	All	1.08 (1.03, 1.13)	0.00	3511 / 34048	1.02 (0.95, 1.10)	0.53	3367 / 33422	1.02 (0.95, 1.10)	0.53	3367 / 33422
Trimester 2	Neonatal	All	Female	All	All	All	1.05 (0.98, 1.13)	0.18	1421 / 30881	0.97 (0.87, 1.08)	0.60	1360 / 30351	0.97 (0.87, 1.08)	0.60	1360 / 30351
Trimester 2	Neonatal	All	Male	All	All	All	1.10 (1.03, 1.16)	0.00	2107 / 32644	1.01 (0.93, 1.10)	0.80	2008 / 32063	1.01 (0.93, 1.10)	0.80	2008 / 32063
Trimester 2	Postneonatal	All	Female	All	All	All	1.08 (1.00, 1.17)	0.05	1056 / 30516	1.02 (0.90, 1.15)	0.78	1014 / 30005	1.02 (0.90, 1.15)	0.78	1014 / 30005
Trimester 2	Postneonatal	All	Male	All	All	All	1.05 (0.98, 1.13)	0.15	1404 / 31941	1.04 (0.94, 1.16)	0.47	1359 / 31414	1.04 (0.94, 1.16)	0.47	1359 / 31414
Trimester 3	All	All	Female	All	All	All	1.00 (0.93, 1.07)	0.93	1733 / 31071	0.94 (0.85, 1.04)	0.23	1668 / 30542	0.94 (0.85, 1.04)	0.23	1668 / 30542
Trimester 3	All	All	Male	All	All	All	1.03 (0.97, 1.09)	0.37	2343 / 32781	1.04 (0.96, 1.13)	0.38	2267 / 32227	1.04 (0.96, 1.13)	0.38	2267 / 32227
Trimester 3	Neonatal	All	Female	All	All	All	1.00 (0.91, 1.10)	0.92	820 / 30158	0.94 (0.81, 1.08)	0.37	791 / 29665	0.94 (0.81, 1.08)	0.37	791 / 29665
Trimester 3	Neonatal	All	Male	All	All	All	1.07 (0.99, 1.15)	0.11	1138 / 31576	1.06 (0.95, 1.20)	0.29	1101 / 31061	1.06 (0.95, 1.20)	0.29	1101 / 31061
Trimester 3	Postneonatal	All	Female	All	All	All	0.99 (0.90, 1.08)	0.83	913 / 30251	0.94 (0.82, 1.08)	0.40	877 / 29751	0.94 (0.82, 1.08)	0.40	877 / 29751
Trimester 3	Postneonatal	All	Male	All	All	All	0.99 (0.91, 1.07)	0.76	1205 / 31643	1.01 (0.90, 1.13)	0.86	1166 / 31126	1.01 (0.90, 1.13)	0.86	1166 / 31126

Period	Death	PM2.5 Level	Sex	Race	Term	use of De	Unadjusted Model			Partially Adjusted Model			Fully Adjusted Model		
							Estimate (95% CI)	P-value	Cases/Observations	Estimate (95% CI)	P-value	Cases/Observations	Estimate (95% CI)	P-value	Cases/Observations
Race															
Trimester 1	All	All	All	frican India	All	All	0.68 (0.48, 0.96)	0.03	110 / 813	0.58 (0.35, 0.95)	0.03	106 / 796	0.58 (0.35, 0.95)	0.03	106 / 796
Trimester 1	Neonatal	All	All	frican India	All	All	0.78 (0.50, 1.22)	0.28	59 / 762	0.71 (0.38, 1.34)	0.29	57 / 747	0.72 (0.38, 1.34)	0.30	57 / 747
Trimester 1	Postneonatal	All	All	frican India	All	All	0.57 (0.35, 0.93)	0.02	51 / 754	0.47 (0.23, 0.96)	0.04	49 / 739	0.47 (0.23, 0.96)	0.04	49 / 739
Trimester 2	All	All	All	frican India	All	All	0.87 (0.61, 1.25)	0.46	110 / 813	0.95 (0.54, 1.66)	0.86	106 / 796	0.95 (0.54, 1.66)	0.85	106 / 796
Trimester 2	Neonatal	All	All	frican India	All	All	0.98 (0.61, 1.57)	0.93	59 / 762	0.92 (0.45, 1.90)	0.83	57 / 747	0.91 (0.45, 1.86)	0.81	57 / 747
Trimester 2	Postneonatal	All	All	frican India	All	All	0.75 (0.45, 1.26)	0.28	51 / 754	0.93 (0.42, 2.05)	0.85	49 / 739	0.93 (0.42, 2.07)	0.86	49 / 739
Trimester 3	All	All	All	frican India	All	All	1.15 (0.78, 1.69)	0.47	71 / 770	1.45 (0.77, 2.73)	0.24	68 / 755	1.45 (0.77, 2.73)	0.25	68 / 755
Trimester 3	Neonatal	All	All	frican India	All	All	1.25 (0.72, 2.17)	0.43	25 / 724	0.93 (0.34, 2.60)	0.89	24 / 711	0.87 (0.32, 2.35)	0.78	24 / 711
Trimester 3	Postneonatal	All	All	frican India	All	All	1.10 (0.67, 1.81)	0.71	46 / 745	1.92 (0.87, 4.25)	0.11	44 / 731	1.92 (0.87, 4.25)	0.11	44 / 731
Full pregnancy	All	All	All	frican India	All	All	0.78 (0.51, 1.18)	0.24	110 / 813	0.73 (0.29, 1.83)	0.50	106 / 796	0.72 (0.29, 1.82)	0.49	106 / 796
Full pregnancy	Neonatal	All	All	frican India	All	All	0.88 (0.50, 1.54)	0.66	59 / 762	0.70 (0.20, 2.39)	0.56	57 / 747	0.68 (0.20, 2.33)	0.54	57 / 747
Full pregnancy	Postneonatal	All	All	frican India	All	All	0.66 (0.36, 1.22)	0.18	51 / 754	0.74 (0.19, 2.83)	0.66	49 / 739	0.74 (0.20, 2.83)	0.66	49 / 739
Month 1	All	All	All	frican India	All	All	0.90 (0.60, 1.33)	0.59	61 / 764	1.37 (0.71, 2.62)	0.35	59 / 749	1.37 (0.72, 2.63)	0.34	59 / 749
Month 1	Neonatal	All	All	frican India	All	All	1.16 (0.55, 2.43)	0.70	10 / 713	1.34 (0.36, 4.97)	0.67	10 / 700	1.27 (0.31, 5.15)	0.74	10 / 700
Month 1	Postneonatal	All	All	frican India	All	All	0.85 (0.54, 1.33)	0.47	51 / 754	1.32 (0.65, 2.67)	0.45	49 / 739	1.31 (0.65, 2.65)	0.45	49 / 739
Trimester 1	All	All	All	acific Islar	All	All	1.19 (0.97, 1.46)	0.09	143 / 2273	1.12 (0.84, 1.50)	0.43	141 / 2230	1.10 (0.82, 1.48)	0.51	141 / 2230
Trimester 1	Neonatal	All	All	acific Islar	All	All	1.21 (0.95, 1.53)	0.13	91 / 2221	1.08 (0.75, 1.55)	0.68	89 / 2178	1.06 (0.73, 1.53)	0.77	89 / 2178
Trimester 1	Postneonatal	All	All	acific Islar	All	All	1.16 (0.83, 1.64)	0.39	52 / 2182	1.21 (0.76, 1.92)	0.43	52 / 2141	1.19 (0.75, 1.90)	0.45	52 / 2141
Trimester 2	All	All	All	acific Islar	All	All	1.07 (0.85, 1.34)	0.56	143 / 2273	0.77 (0.55, 1.10)	0.15	141 / 2230	0.76 (0.53, 1.08)	0.13	141 / 2230
Trimester 2	Neonatal	All	All	acific Islar	All	All	1.03 (0.78, 1.37)	0.81	91 / 2221	0.62 (0.40, 0.98)	0.04	89 / 2178	0.60 (0.38, 0.95)	0.03	89 / 2178
Trimester 2	Postneonatal	All	All	acific Islar	All	All	1.13 (0.79, 1.62)	0.51	52 / 2182	1.05 (0.63, 1.75)	0.86	52 / 2141	1.04 (0.62, 1.74)	0.88	52 / 2141
Trimester 3	All	All	All	acific Islar	All	All	1.02 (0.78, 1.34)	0.89	105 / 2232	0.84 (0.54, 1.30)	0.43	104 / 2190	0.82 (0.53, 1.27)	0.37	104 / 2190
Trimester 3	Neonatal	All	All	acific Islar	All	All	1.10 (0.78, 1.56)	0.60	59 / 2186	0.79 (0.44, 1.41)	0.43	58 / 2144	0.75 (0.41, 1.36)	0.34	58 / 2144
Trimester 3	Postneonatal	All	All	acific Islar	All	All	0.92 (0.60, 1.42)	0.71	46 / 2173	0.87 (0.46, 1.64)	0.67	46 / 2132	0.86 (0.46, 1.63)	0.65	46 / 2132
Full pregnancy	All	All	All	acific Islar	All	All	1.19 (0.90, 1.58)	0.22	143 / 2273	0.71 (0.36, 1.39)	0.32	141 / 2230	0.66 (0.33, 1.31)	0.24	141 / 2230
Full pregnancy	Neonatal	All	All	acific Islar	All	All	1.22 (0.86, 1.72)	0.27	91 / 2221	0.51 (0.22, 1.20)	0.12	89 / 2178	0.46 (0.19, 1.11)	0.08	89 / 2178
Full pregnancy	Postneonatal	All	All	acific Islar	All	All	1.16 (0.73, 1.83)	0.54	52 / 2182	1.16 (0.40, 3.37)	0.79	52 / 2141	1.12 (0.38, 3.36)	0.84	52 / 2141
Month 1	All	All	All	acific Islar	All	All	0.98 (0.74, 1.29)	0.86	74 / 2204	0.77 (0.53, 1.12)	0.17	74 / 2163	0.76 (0.52, 1.12)	0.16	74 / 2163
Month 1	Neonatal	All	All	acific Islar	All	All	1.10 (0.65, 1.87)	0.73	22 / 2152	0.79 (0.40, 1.55)	0.49	22 / 2111	0.78 (0.40, 1.54)	0.48	22 / 2111
Month 1	Postneonatal	All	All	acific Islar	All	All	0.92 (0.67, 1.28)	0.63	52 / 2182	0.77 (0.49, 1.19)	0.24	52 / 2141	0.76 (0.49, 1.19)	0.23	52 / 2141

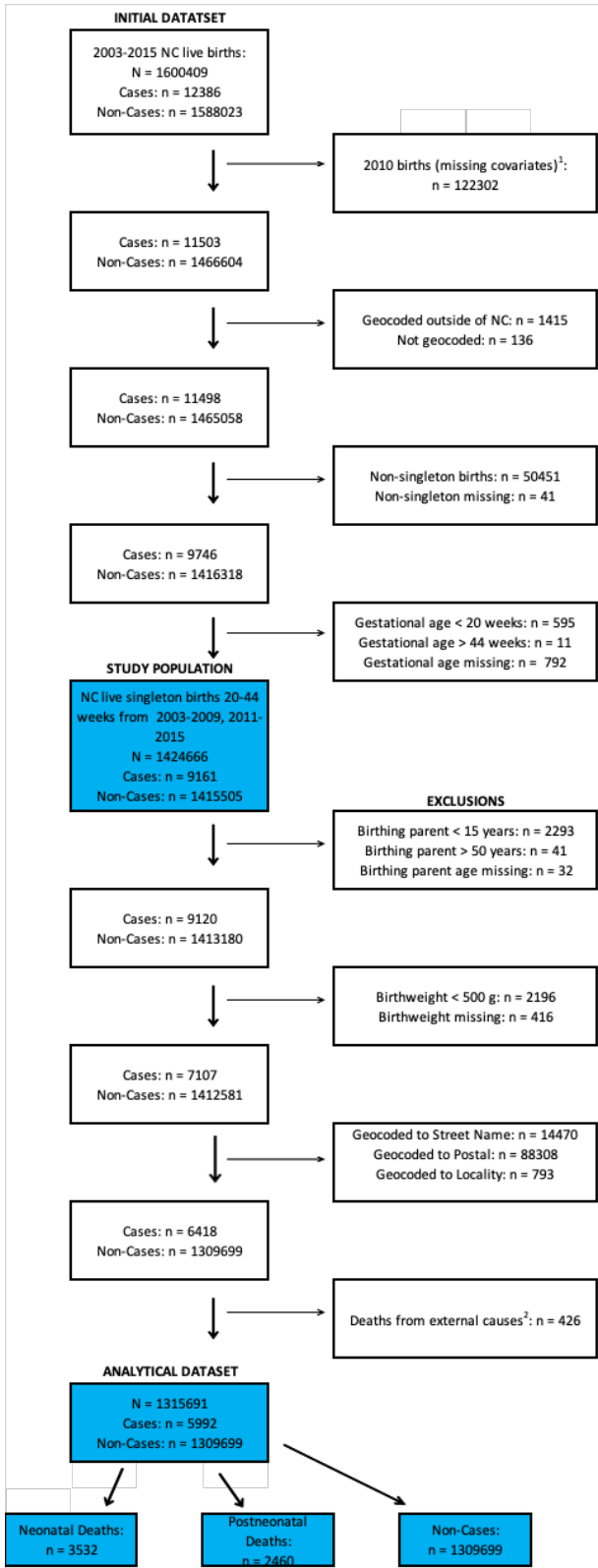
Trimester 1	All	All	All	Hispanic	All	All	1.06 (0.97, 1.17)	0.21	733 / 9858	0.96 (0.84, 1.09)	0.54	704 / 9688	0.96 (0.84, 1.09)	0.52	704 / 9688
Trimester 1	Neonatal	All	All	Hispanic	All	All	1.05 (0.94, 1.18)	0.37	488 / 9613	0.93 (0.79, 1.08)	0.34	465 / 9449	0.93 (0.80, 1.09)	0.36	465 / 9449
Trimester 1	Postneonatal	All	All	Hispanic	All	All	1.08 (0.92, 1.27)	0.36	245 / 9370	1.03 (0.83, 1.27)	0.82	239 / 9223	1.01 (0.81, 1.26)	0.91	239 / 9223
Trimester 2	All	All	All	Hispanic	All	All	1.09 (0.99, 1.20)	0.08	733 / 9858	1.00 (0.87, 1.15)	0.97	704 / 9688	1.00 (0.86, 1.15)	0.97	704 / 9688
Trimester 2	Neonatal	All	All	Hispanic	All	All	1.13 (1.01, 1.27)	0.03	488 / 9613	1.05 (0.89, 1.24)	0.55	465 / 9449	1.06 (0.90, 1.25)	0.51	465 / 9449
Trimester 2	Postneonatal	All	All	Hispanic	All	All	1.00 (0.85, 1.17)	0.96	245 / 9370	0.89 (0.69, 1.14)	0.36	239 / 9223	0.88 (0.68, 1.13)	0.31	239 / 9223
Trimester 3	All	All	All	Hispanic	All	All	1.13 (1.01, 1.26)	0.04	511 / 9609	1.11 (0.93, 1.32)	0.26	493 / 9452	1.10 (0.92, 1.31)	0.28	493 / 9452
Trimester 3	Neonatal	All	All	Hispanic	All	All	1.19 (1.03, 1.38)	0.02	289 / 9387	1.18 (0.95, 1.48)	0.14	277 / 9236	1.19 (0.95, 1.49)	0.13	277 / 9236
Trimester 3	Postneonatal	All	All	Hispanic	All	All	1.05 (0.88, 1.25)	0.60	222 / 9320	1.01 (0.77, 1.34)	0.92	216 / 9175	1.00 (0.76, 1.33)	0.99	216 / 9175
Full pregnancy	All	All	All	Hispanic	All	All	1.14 (1.01, 1.29)	0.04	733 / 9858	0.99 (0.75, 1.31)	0.93	704 / 9688	0.98 (0.74, 1.31)	0.91	704 / 9688
Full pregnancy	Neonatal	All	All	Hispanic	All	All	1.18 (1.02, 1.38)	0.03	488 / 9613	1.04 (0.73, 1.47)	0.84	465 / 9449	1.05 (0.74, 1.51)	0.77	465 / 9449
Full pregnancy	Postneonatal	All	All	Hispanic	All	All	1.06 (0.86, 1.30)	0.58	245 / 9370	0.89 (0.58, 1.38)	0.61	239 / 9223	0.85 (0.54, 1.33)	0.48	239 / 9223
Month 1	All	All	All	Hispanic	All	All	1.07 (0.95, 1.21)	0.24	354 / 9479	1.02 (0.86, 1.21)	0.81	342 / 9326	1.02 (0.86, 1.20)	0.83	342 / 9326
Month 1	Neonatal	All	All	Hispanic	All	All	1.03 (0.83, 1.28)	0.78	109 / 9234	0.85 (0.61, 1.19)	0.35	103 / 9087	0.86 (0.62, 1.19)	0.37	103 / 9087
Month 1	Postneonatal	All	All	Hispanic	All	All	1.09 (0.95, 1.26)	0.22	245 / 9370	1.10 (0.91, 1.33)	0.34	239 / 9223	1.09 (0.90, 1.32)	0.38	239 / 9223
Trimester 1	All	All	All	White NH	All	All	1.04 (0.99, 1.10)	0.11	2749 / 36840	1.05 (0.98, 1.13)	0.13	2633 / 36207	1.05 (0.98, 1.12)	0.16	2633 / 36207
Trimester 1	Neonatal	All	All	White NH	All	All	1.05 (0.99, 1.13)	0.13	1606 / 35697	1.07 (0.98, 1.17)	0.13	1532 / 35106	1.07 (0.98, 1.16)	0.14	1532 / 35106
Trimester 1	Postneonatal	All	All	White NH	All	All	1.03 (0.95, 1.11)	0.49	1143 / 35234	1.03 (0.93, 1.14)	0.61	1101 / 34675	1.02 (0.92, 1.13)	0.67	1101 / 34675
Trimester 2	All	All	All	White NH	All	All	1.04 (0.99, 1.10)	0.14	2749 / 36840	1.04 (0.97, 1.12)	0.30	2633 / 36207	1.03 (0.96, 1.11)	0.38	2633 / 36207
Trimester 2	Neonatal	All	All	White NH	All	All	1.04 (0.97, 1.11)	0.33	1606 / 35697	1.03 (0.93, 1.13)	0.57	1532 / 35106	1.02 (0.93, 1.13)	0.64	1532 / 35106
Trimester 2	Postneonatal	All	All	White NH	All	All	1.05 (0.97, 1.14)	0.23	1143 / 35234	1.05 (0.94, 1.18)	0.38	1101 / 34675	1.05 (0.93, 1.17)	0.44	1101 / 34675
Trimester 3	All	All	All	White NH	All	All	0.98 (0.92, 1.05)	0.58	2077 / 36093	0.97 (0.89, 1.06)	0.51	2002 / 35502	0.97 (0.88, 1.05)	0.43	2002 / 35502
Trimester 3	Neonatal	All	All	White NH	All	All	0.99 (0.90, 1.07)	0.74	1046 / 35062	0.99 (0.87, 1.12)	0.88	1008 / 34508	0.99 (0.87, 1.12)	0.82	1008 / 34508
Trimester 3	Postneonatal	All	All	White NH	All	All	0.98 (0.90, 1.07)	0.64	1031 / 35047	0.95 (0.84, 1.07)	0.40	994 / 34494	0.94 (0.84, 1.06)	0.35	994 / 34494
Full pregnancy	All	All	All	White NH	All	All	1.06 (0.99, 1.14)	0.09	2749 / 36840	1.13 (0.98, 1.31)	0.09	2633 / 36207	1.12 (0.96, 1.29)	0.14	2633 / 36207
Full pregnancy	Neonatal	All	All	White NH	All	All	1.07 (0.98, 1.17)	0.15	1606 / 35697	1.16 (0.95, 1.42)	0.14	1532 / 35106	1.15 (0.94, 1.40)	0.18	1532 / 35106
Full pregnancy	Postneonatal	All	All	White NH	All	All	1.05 (0.95, 1.17)	0.34	1143 / 35234	1.09 (0.88, 1.35)	0.44	1101 / 34675	1.07 (0.86, 1.32)	0.55	1101 / 34675
Month 1	All	All	All	White NH	All	All	1.00 (0.94, 1.06)	0.90	1537 / 35628	0.95 (0.88, 1.03)	0.18	1481 / 35055	0.94 (0.87, 1.02)	0.15	1481 / 35055
Month 1	Neonatal	All	All	White NH	All	All	1.02 (0.91, 1.14)	0.72	394 / 34485	0.93 (0.80, 1.08)	0.37	380 / 33954	0.93 (0.80, 1.08)	0.35	380 / 33954
Month 1	Postneonatal	All	All	White NH	All	All	0.99 (0.92, 1.06)	0.74	1143 / 35234	0.95 (0.87, 1.05)	0.31	1101 / 34675	0.95 (0.87, 1.04)	0.26	1101 / 34675
Trimester 1	All	All	All	Black NH	All	All	1.09 (1.03, 1.16)	0.00	2244 / 16094	1.02 (0.94, 1.10)	0.69	2145 / 15759	1.01 (0.93, 1.09)	0.83	2145 / 15759
Trimester 1	Neonatal	All	All	Black NH	All	All	1.06 (0.99, 1.15)	0.11	1280 / 15130	0.96 (0.87, 1.06)	0.44	1218 / 14832	0.95 (0.86, 1.06)	0.36	1218 / 14832
Trimester 1	Postneonatal	All	All	Black NH	All	All	1.12 (1.03, 1.22)	0.01	964 / 14814	1.09 (0.97, 1.22)	0.15	927 / 14541	1.08 (0.96, 1.22)	0.19	927 / 14541
Trimester 2	All	All	All	Black NH	All	All	1.08 (1.02, 1.15)	0.01	2244 / 16094	1.02 (0.93, 1.12)	0.66	2145 / 15759	1.01 (0.92, 1.11)	0.82	2145 / 15759
Trimester 2	Neonatal	All	All	Black NH	All	All	1.08 (1.00, 1.17)	0.06	1280 / 15130	0.99 (0.88, 1.11)	0.83	1218 / 14832	0.98 (0.87, 1.10)	0.72	1218 / 14832
Trimester 2	Postneonatal	All	All	Black NH	All	All	1.08 (0.99, 1.18)	0.07	964 / 14814	1.06 (0.94, 1.21)	0.33	927 / 14541	1.05 (0.93, 1.20)	0.42	927 / 14541
Trimester 3	All	All	All	Black NH	All	All	1.01 (0.93, 1.09)	0.88	1307 / 15045	1.01 (0.90, 1.14)	0.88	1260 / 14767	1.00 (0.89, 1.13)	0.98	1260 / 14767
Trimester 3	Neonatal	All	All	Black NH	All	All	1.05 (0.93, 1.18)	0.43	538 / 14276	1.00 (0.83, 1.20)	0.99	521 / 14028	1.00 (0.83, 1.20)	1.00	521 / 14028
Trimester 3	Postneonatal	All	All	Black NH	All	All	0.98 (0.89, 1.08)	0.64	769 / 14507	1.01 (0.87, 1.18)	0.86	739 / 14246	1.00 (0.86, 1.17)	0.98	739 / 14246
Full pregnancy	All	All	All	Black NH	All	All	1.14 (1.06, 1.23)	0.00	2244 / 16094	1.10 (0.93, 1.31)	0.25	2145 / 15759	1.08 (0.91, 1.28)	0.39	2145 / 15759
Full pregnancy	Neonatal	All	All	Black NH	All	All	1.14 (1.03, 1.26)	0.01	1280 / 15130	1.00 (0.79, 1.26)	1.00	1218 / 14832	0.98 (0.77, 1.24)	0.84	1218 / 14832
Full pregnancy	Postneonatal	All	All	Black NH	All	All	1.16 (1.04, 1.29)	0.01	964 / 14814	1.27 (0.99, 1.62)	0.06	927 / 14541	1.24 (0.97, 1.59)	0.09	927 / 14541
Month 1	All	All	All	Black NH	All	All	1.09 (1.02, 1.16)	0.01	1305 / 15155	1.05 (0.96, 1.15)	0.26	1260 / 14874	1.05 (0.96, 1.15)	0.31	1260 / 14874
Month 1	Neonatal	All	All	Black NH	All	All	1.12 (0.99, 1.28)	0.07	341 / 14191	1.02 (0.85, 1.21)	0.85	333 / 13947	1.01 (0.85, 1.21)	0.89	333 / 13947
Month 1	Postneonatal	All	All	Black NH	All	All	1.07 (0.99, 1.16)	0.07	964 / 14814	1.07 (0.96, 1.19)	0.20	927 / 14541	1.06 (0.96, 1.18)	0.24	927 / 14541

Period	Death	PM2.5 Level	Sex	Race	Term	use of De	Unadjusted Model			Partially Adjusted Model			Fully Adjusted Model		
							Estimate (95% CI)	P-value	Cases/Observations	Estimate (95% CI)	P-value	Cases/Observations	Estimate (95% CI)	P-value	Cases/Observations
Cause of Death															
Trimester 1	All	All	All	All	All	SIDS	1.47 (1.35, 1.61)	0.00	590 / 60588	0.93 (0.81, 1.06)	0.27	567 / 59614	0.93 (0.82, 1.07)	0.33	567 / 59613
Trimester 1	Neonatal	All	All	All	All	SIDS	1.81 (1.41, 2.31)	0.00	63 / 60061	1.01 (0.70, 1.47)	0.95	63 / 59110	1.05 (0.72, 1.53)	0.81	63 / 59109
Trimester 1	Postneonatal	All	All	All	All	SIDS	1.43 (1.30, 1.57)	0.00	527 / 60525	0.92 (0.80, 1.06)	0.23	504 / 59551	0.92 (0.80, 1.07)	0.27	504 / 59550
Trimester 2	All	All	All	All	All	SIDS	1.40 (1.28, 1.53)	0.00	590 / 60588	0.78 (0.68, 0.90)	0.00	567 / 59614	0.78 (0.68, 0.91)	0.00	567 / 59613
Trimester 2	Neonatal	All	All	All	All	SIDS	1.50 (1.15, 1.95)	0.00	63 / 60061	0.63 (0.39, 1.01)	0.06	63 / 59110	0.64 (0.40, 1.03)	0.07	63 / 59109
Trimester 2	Postneonatal	All	All	All	All	SIDS	1.39 (1.27, 1.52)	0.00	527 / 60525	0.81 (0.70, 0.93)	0.00	504 / 59551	0.81 (0.69, 0.94)	0.01	504 / 59550
Trimester 3	All	All	All	All	All	SIDS	1.47 (1.35, 1.61)	0.00	583 / 60360	0.89 (0.77, 1.02)	0.09	560 / 59395	0.89 (0.77, 1.03)	0.12	560 / 59394
Trimester 3	Neonatal	All	All	All	All	SIDS	1.45 (1.18, 1.79)	0.00	63 / 59840	0.60 (0.40, 0.90)	0.01	63 / 58898	0.60 (0.40, 0.91)	0.02	63 / 58897
Trimester 3	Postneonatal	All	All	All	All	SIDS	1.48 (1.35, 1.62)	0.00	520 / 60297	0.93 (0.81, 1.08)	0.36	497 / 59332	0.94 (0.81, 1.09)	0.42	497 / 59331
Full pregnancy	All	All	All	All	All	SIDS	1.93 (1.71, 2.18)	0.00	590 / 60588	0.64 (0.51, 0.81)	0.00	567 / 59614	0.63 (0.49, 0.81)	0.00	567 / 59613
Full pregnancy	Neonatal	All	All	All	All	SIDS	2.32 (1.67, 3.24)	0.00	63 / 60061	0.40 (0.20, 0.80)	0.01	63 / 59110	0.40 (0.19, 0.82)	0.01	63 / 59109
Full pregnancy	Postneonatal	All	All	All	All	SIDS	1.89 (1.66, 2.15)	0.00	527 / 60525	0.69 (0.54, 0.88)	0.00	504 / 59551	0.68 (0.52, 0.88)	0.00	504 / 59550
Month 1	All	All	All	All	All	SIDS	1.39 (1.29, 1.50)	0.00	579 / 60577	0.96 (0.86, 1.08)	0.53	556 / 59603	0.97 (0.86, 1.09)	0.61	556 / 59602
Month 1	Neonatal	All	All	All	All	SIDS	1.46 (1.20, 1.78)	0.00	52 / 60050	0.80 (0.56, 1.13)	0.20	52 / 59099	0.82 (0.57, 1.18)	0.28	52 / 59098
Month 1	Postneonatal	All	All	All	All	SIDS	1.38 (1.27, 1.50)	0.00	527 / 60525	0.98 (0.87, 1.11)	0.78	504 / 59551	0.99 (0.87, 1.12)	0.84	504 / 59550
Trimester 1	All	All	All	All	All	y (J041-J	1.41 (0.90, 2.20)	0.14	32 / 60030	1.13 (0.64, 1.99)	0.68	31 / 59078	1.19 (0.67, 2.11)	0.55	31 / 59077
Trimester 1	Neonatal	All	All	All	All	y (J041-J	2.38 (0.88, 6.45)	0.09	4 / 60002	2.28 (1.10, 4.74)	0.03	4 / 59051	2.54 (1.00, 6.44)	0.05	4 / 59050
Trimester 1	Postneonatal	All	All	All	All	y (J041-J	1.29 (0.78, 2.13)	0.32	28 / 60026	0.97 (0.50, 1.89)	0.94	27 / 59074	1.02 (0.53, 1.95)	0.96	27 / 59073
Trimester 2	All	All	All	All	All	y (J041-J	1.53 (1.01, 2.32)	0.04	32 / 60030	1.28 (0.70, 2.32)	0.42	31 / 59078	1.37 (0.78, 2.43)	0.28	31 / 59077
Trimester 2	Neonatal	All	All	All	All	y (J041-J	3.77 (1.03, 13.82)	0.05	4 / 60002	5.77 (1.64, 20.33)	0.01	4 / 59051	5.85 (1.93, 17.76)	0.00	4 / 59050
Trimester 2	Postneonatal	All	All	All	All	y (J041-J	1.32 (0.86, 2.01)	0.21	28 / 60026	0.94 (0.49, 1.82)	0.86	27 / 59074	1.01 (0.54, 1.88)	0.97	27 / 59073
Trimester 3	All	All	All	All	All	y (J041-J	2.08 (0.51, 8.49)	0.31	5 / 59782	1.88 (0.36, 9.75)	0.45	4 / 58839	1.31 (0.33, 5.15)	0.70	4 / 58838
Trimester 3	Neonatal	All	All	All	All	y (J041-J	1.00 (0.99, 1.01)	1.00	0 / 59777	1.00 (0.99, 1.02)	1.00	0 / 58835	1.00 (0.99, 1.02)	1.00	0 / 58834
Trimester 3	Postneonatal	All	All	All	All	y (J041-J	2.08 (0.51, 8.49)	0.31	5 / 59782	1.88 (0.36, 9.75)	0.45	4 / 58839	1.31 (0.33, 5.15)	0.70	4 / 58838
Full pregnancy	All	All	All	All	All	y (J041-J	2.04 (0.95, 4.38)	0.07	32 / 60030	2.12 (0.42, 10.63)	0.36	31 / 59078	2.89 (0.51, 16.26)	0.23	31 / 59077
Full pregnancy	Neonatal	All	All	All	All	y (J041-J	7.18 (0.10, 2843.20)	0.28	4 / 60002	7.00 (0.70, 157129)	0.00	4 / 59051	8.81 (0.02, 120995)	0.00	4 / 59050
Full pregnancy	Postneonatal	All	All	All	All	y (J041-J	1.63 (0.77, 3.49)	0.20	28 / 60026	1.04 (0.20, 5.46)	0.97	27 / 59074	1.27 (0.23, 7.09)	0.78	27 / 59073
Month 1	All	All	All	All	All	y (J041-J	1.41 (1.03, 1.95)	0.03	32 / 60030	1.22 (0.74, 2.00)	0.43	31 / 59078	1.28 (0.78, 2.09)	0.33	31 / 59077
Month 1	Neonatal	All	All	All	All	y (J041-J	1.10 (0.48, 2.51)	0.81	4 / 60002	0.76 (0.45, 1.28)	0.30	4 / 59051	0.86 (0.63, 1.16)	0.32	4 / 59050
Month 1	Postneonatal	All	All	All	All	y (J041-J	1.46 (1.03, 2.05)	0.03	28 / 60026	1.32 (0.75, 2.32)	0.34	27 / 59074	1.38 (0.78, 2.44)	0.27	27 / 59073

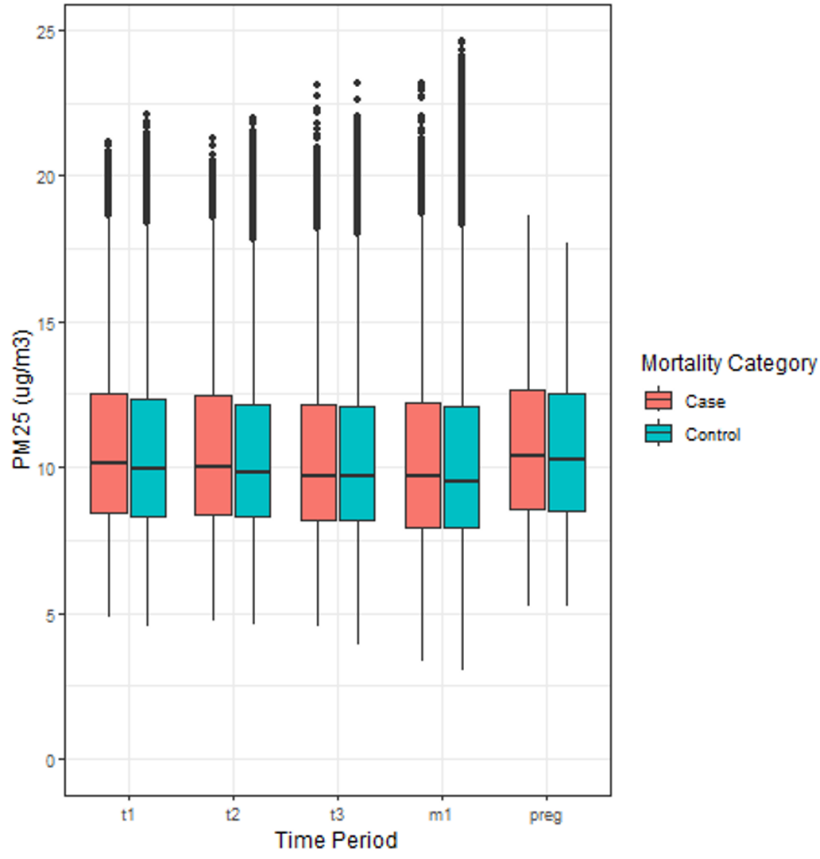
Period	Death	PM2.5 Level	Sex	Race	Term	use of De	Unadjusted Model			Partially Adjusted Model			Fully Adjusted Model		
							Estimate (95% CI)	P-value	Cases/Observations	Estimate (95% CI)	P-value	Cases/Observations	Estimate (95% CI)	P-value	Cases/Observations
Term															
Trimester 1	All	All	All	All	Full Term	All	1.03 (0.98, 1.09)	0.20	2537 / 57695	1.06 (0.99, 1.14)	0.11	2458 / 56810	1.06 (0.99, 1.14)	0.12	2458 / 56809
Trimester 1	Neonatal	All	All	All	Full Term	All	1.07 (0.99, 1.16)	0.10	995 / 56153	1.11 (0.99, 1.23)	0.07	966 / 55318	1.11 (0.99, 1.24)	0.07	966 / 55317
Trimester 1	Postneonatal	All	All	All	Full Term	All	1.01 (0.95, 1.08)	0.75	1542 / 56700	1.03 (0.94, 1.12)	0.55	1492 / 55844	1.03 (0.94, 1.12)	0.57	1492 / 55843
Trimester 2	All	All	All	All	Full Term	All	1.02 (0.97, 1.08)	0.40	2537 / 57695	1.05 (0.98, 1.14)	0.19	2458 / 56810	1.05 (0.97, 1.14)	0.20	2458 / 56809
Trimester 2	Neonatal	All	All	All	Full Term	All	1.03 (0.94, 1.12)	0.54	995 / 56153	1.02 (0.90, 1.14)	0.79	966 / 55318	1.01 (0.90, 1.14)	0.82	966 / 55317
Trimester 2	Postneonatal	All	All	All	Full Term	All	1.02 (0.95, 1.09)	0.55	1542 / 56700	1.07 (0.97, 1.18)	0.15	1492 / 55844	1.07 (0.97, 1.19)	0.16	1492 / 55843
Trimester 3	All	All	All	All	Full Term	All	0.98 (0.93, 1.04)	0.53	2537 / 57695	0.99 (0.92, 1.07)	0.80	2458 / 56810	0.99 (0.91, 1.07)	0.77	2458 / 56809
Trimester 3	Neonatal	All	All	All	Full Term	All	1.00 (0.92, 1.08)	0.92	995 / 56153	0.97 (0.86, 1.09)	0.58	966 / 55318	0.96 (0.85, 1.09)	0.55	966 / 55317
Trimester 3	Postneonatal	All	All	All	Full Term	All	0.97 (0.91, 1.05)	0.47	1542 / 56700	1.00 (0.91, 1.11)	0.93	1492 / 55844	1.00 (0.91, 1.11)	0.95	1492 / 55843
Full pregnancy	All	All	All	All	Full Term	All	1.02 (0.96, 1.09)	0.51	2537 / 57695	1.12 (0.98, 1.28)	0.10	2458 / 56810	1.13 (0.98, 1.30)	0.10	2458 / 56809
Full pregnancy	Neonatal	All	All	All	Full Term	All	1.05 (0.95, 1.17)	0.33	995 / 56153	1.12 (0.91, 1.38)	0.29	966 / 55318	1.12 (0.90, 1.40)	0.30	966 / 55317
Full pregnancy	Postneonatal	All	All	All	Full Term	All	1.00 (0.92, 1.09)	0.93	1542 / 56700	1.11 (0.94, 1.32)	0.22	1492 / 55844	1.12 (0.93, 1.34)	0.23	1492 / 55843
Month 1	All	All	All	All	Full Term	All	0.98 (0.92, 1.03)	0.36	1909 / 57067	0.96 (0.89, 1.03)	0.28	1856 / 56208	0.96 (0.89, 1.03)	0.27	1856 / 56207
Month 1	Neonatal	All	All	All	Full Term	All	1.04 (0.93, 1.16)	0.49	367 / 55525	0.90 (0.78, 1.05)	0.19	364 / 54716	0.90 (0.77, 1.06)	0.21	364 / 54715
Month 1	Postneonatal	All	All	All	Full Term	All	0.96 (0.90, 1.02)	0.19	1542 / 56700	0.98 (0.90, 1.06)	0.56	1492 / 55844	0.97 (0.90, 1.06)	0.53	1492 / 55843

Supplemental Table S4: Model specification on analytical sample per 4.0 $\mu\text{g}/\text{m}^3$ increase in $\text{PM}_{2.5}$ on pregnancy exposure window. This model specification aims to evaluate which covariates help to explain the differences between the unadjusted and fully adjusted models when evaluating the association between entire pregnancy exposure and infant mortality. Confidence Interval (CI). Akaike information criterion (AIC). a) Main results from initial analysis. b) Results from 'Leave one out' analysis of fully adjusted model. 2010 Rural-Urban Commuting Area (RUCA) codes from the US Department of Agriculture ("USDA ERS - Rural-Urban Commuting Area Codes" 2023). Neighborhood Deprivation Index (NDI) uses eight previously identified socio-demographic variables representing five domains - poverty, housing, employment, occupation, and education from the 2013-2017 American Community Survey (ACS) at the census tract (Messer et al. 2006). c) Results compared splines with different degrees of freedom (df) and exclusion for 3 variables. The exclusion of these variables was tested because of concerns of data quality. d) Results compared adding year of birth as an indicator variable and each variable separately to the unadjusted model. e) Results stratified the analysis by two different year ranges and separately adjusted for year as a binary indicator. f) Results stratified by each year separately with the fully adjusted model.

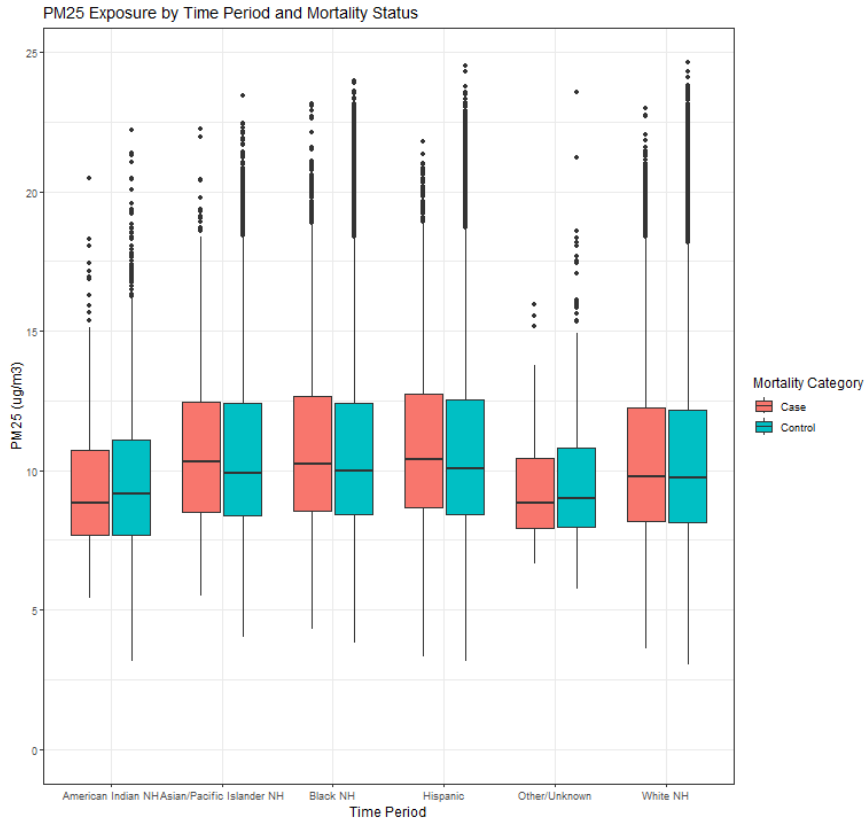
Model	Estimate (95% CI)	P-value	Cases/Observations	AIC
a) Main models for pregnancy exposure				
Unadjusted Model	1.12 (1.06, 1.17)	0.00	5992 / 65990	40154
Fully adjusted model	1.05 (0.95, 1.17)	0.30	5741 / 64787	37379
b) Exclude each variable from fully adjusted model				
Fully adjusted model but exclude age	1.06 (0.95, 1.17)	0.30	5741 / 64787	
Fully adjusted model but exclude education	1.05 (0.94, 1.16)	0.39	5761 / 64896	
Fully adjusted model but exclude smoke	1.05 (0.95, 1.16)	0.37	5779 / 64996	
Fully adjusted model but exclude parity	1.05 (0.95, 1.17)	0.31	5742 / 64795	
Fully adjusted model but exclude prenatal care in first trimester	1.05 (0.95, 1.16)	0.33	5875 / 65454	
Fully adjusted model but exclude marital status	1.06 (0.96, 1.18)	0.24	5744 / 64806	
Fully adjusted model but exclude diabetes	1.05 (0.95, 1.17)	0.31	5747 / 64815	
Fully adjusted model but exclude race	1.06 (0.96, 1.18)	0.23	5741 / 64787	
Fully adjusted model but exclude medicaid	1.05 (0.95, 1.17)	0.31	5741 / 64787	
Fully adjusted model but exclude sex	1.05 (0.95, 1.17)	0.33	5745 / 64792	
Fully adjusted model but exclude year of birth	1.12 (1.06, 1.17)	0.00	5741 / 64787	
Fully adjusted model but exclude RUCA	1.03 (0.93, 1.13)	0.57	5741 / 64788	
Fully adjusted model but exclude NDI	1.07 (0.97, 1.19)	0.17	5741 / 64787	
c) Splines and group exclusions				
Fully adjusted model exclude smoke, parity, prenatal, diabetes, sex	1.05 (0.96, 1.14)	0.32	5938 / 65767	38705
Fully adjusted model with spline year (2 df) of birth	1.07 (0.98, 1.17)	0.13	5741 / 64787	37380
Fully adjusted model with spline year (3 df) of birth	1.04 (0.94, 1.14)	0.46	5741 / 64787	37377
Unadjusted model but add spline year (2 df) of birth	1.10 (1.01, 1.20)	0.03	5992 / 65990	40157
Unadjusted model but add spline year (3 df) of birth in model	1.08 (0.99, 1.18)	0.09	5992 / 65990	40157
Unadjusted model but add indicator year of birth in model	1.10 (1.01, 1.19)	0.03	5992 / 65990	40156
Fully adjusted model with spline (2 df) year of birth but exclude smoke, parity, prenatal	1.05 (0.96, 1.15)	0.26	5938 / 65767	38706
d) Unadjusted model with year of birth indicator and each variable				
Unadjusted model but add year of birth and age	1.11 (1.01, 1.22)	0.03	5992 / 65990	
Unadjusted model but add year of birth and education	1.09 (0.99, 1.20)	0.07	5942 / 65790	
Unadjusted model but add year of birth and smoke	1.13 (1.03, 1.24)	0.01	5921 / 65659	
Unadjusted model but add year of birth and parity	1.09 (1.00, 1.20)	0.06	5982 / 65958	
Unadjusted model but add year of birth and prenatal care	1.09 (0.99, 1.19)	0.09	5828 / 65187	
Unadjusted model but add year of birth and marital status	1.04 (0.94, 1.14)	0.45	5983 / 65961	
Unadjusted model but add year of birth and diabetes	1.10 (1.00, 1.21)	0.05	5976 / 65884	
Unadjusted model but add year of birth and race	1.02 (0.93, 1.12)	0.67	5992 / 65990	
Unadjusted model but add year of birth and medicaid	1.07 (0.98, 1.18)	0.14	5992 / 65990	
Unadjusted model but add year of birth and sex	1.10 (1.00, 1.21)	0.04	5988 / 65985	
Unadjusted model but add year of birth and RUCA	1.19 (1.08, 1.31)	0.00	5992 / 65989	
Unadjusted model but add year of birth and NDI	1.02 (0.93, 1.12)	0.71	5992 / 65990	
e) Create two periods for range of years				
Fully adjusted model with 2003-2008 indicator	1.13 (1.01, 1.27)	0.04	3006 / 32072	
Fully adjusted model stratify 2003-2008	1.13 (1.01, 1.27)	0.03	3006 / 32072	
Fully adjusted model stratify 2012-2015	0.97 (0.74, 1.27)	0.80	1818 / 21736	
Fully adjusted model with 2012-2015 indicator	0.95 (0.73, 1.23)	0.69	1818 / 21736	
f) Stratify fully adjusted model by year				
Fully adjusted model stratify 2003	0.71 (0.52, 0.98)	0.03	473 / 4963	
Fully adjusted model stratify 2004	1.44 (1.06, 1.94)	0.02	477 / 5130	
Fully adjusted model stratify 2005	1.63 (1.20, 2.22)	0.00	509 / 5368	
Fully adjusted model stratify 2006	1.33 (0.98, 1.80)	0.07	497 / 5402	
Fully adjusted model stratify 2007	0.97 (0.76, 1.24)	0.80	537 / 5559	
Fully adjusted model stratify 2008	0.96 (0.71, 1.30)	0.80	513 / 5650	
Fully adjusted model stratify 2009	0.61 (0.44, 0.85)	0.00	489 / 5541	
Fully adjusted model stratify 2011	0.74 (0.44, 1.23)	0.25	428 / 5438	
Fully adjusted model stratify 2012	0.93 (0.60, 1.44)	0.76	447 / 5330	
Fully adjusted model stratify 2013	1.17 (0.60, 2.27)	0.64	440 / 5385	
Fully adjusted model stratify 2014	1.44 (0.77, 2.72)	0.25	454 / 5493	
Fully adjusted model stratify 2015	0.60 (0.33, 1.09)	0.09	477 / 5528	



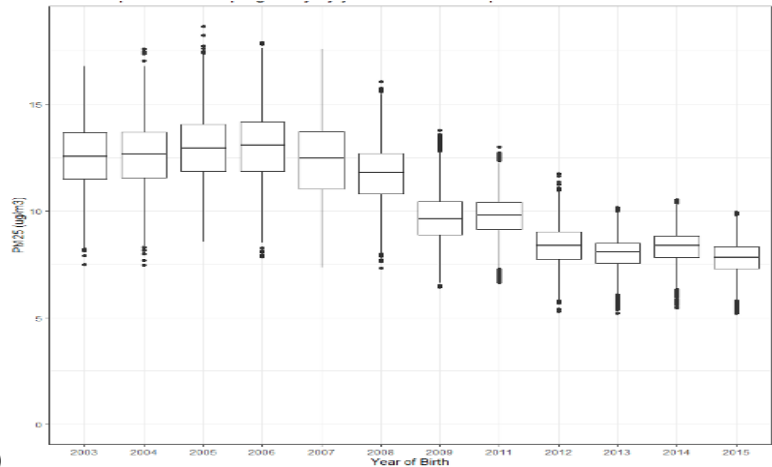
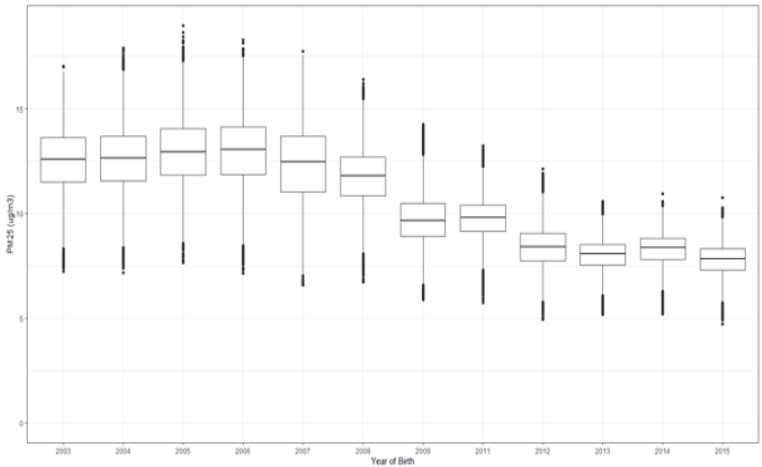
Supplementary Figure S1: Flowchart for creation of analytical dataset with inclusion and exclusion criteria: This figure shows the creation of the analytical dataset from the initial dataset and then study population. ¹ 2010 birth excluded due to changes in the birth certificate which left important covariates such as smoking, education, and diabetes missing. ² Deaths from external causes are categorized by ICD 10 codes (V030-V892; W06-W92; X00-X99; Y069-Y848)



a)

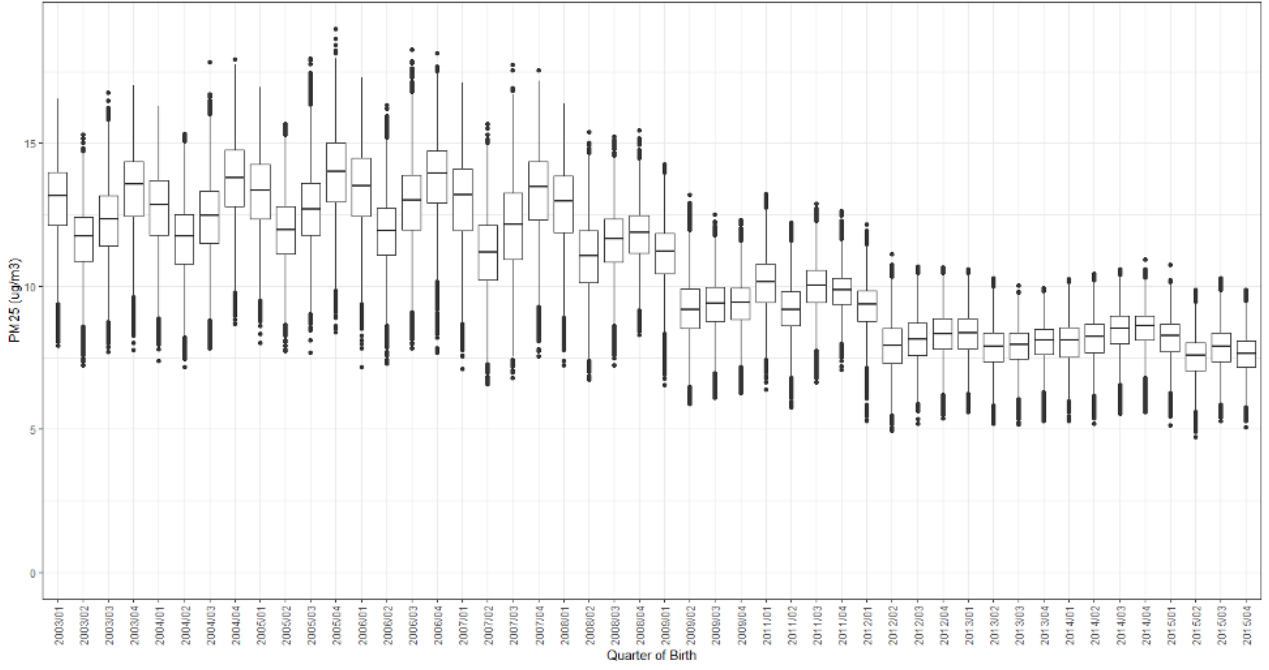


b)
Supplemental Figure S2: Descriptive boxplot of PM_{2.5} by mortality category for analytical sample: PM_{2.5} average exposure in analytical sample stratified by cases (pink) and controls (blue) over a) critical exposure periods (Trimester 1, 2, and 3, Month 1, and Pregnancy) and over b) different race/ethnicity categories self-identified by birthing parent on birth certificate choosing between 6 categories (American Indian NH, Asian/Pacific Islander NH, Black NH, Hispanic, Other/Unknown, White NH). Non-Hispanic (NH).

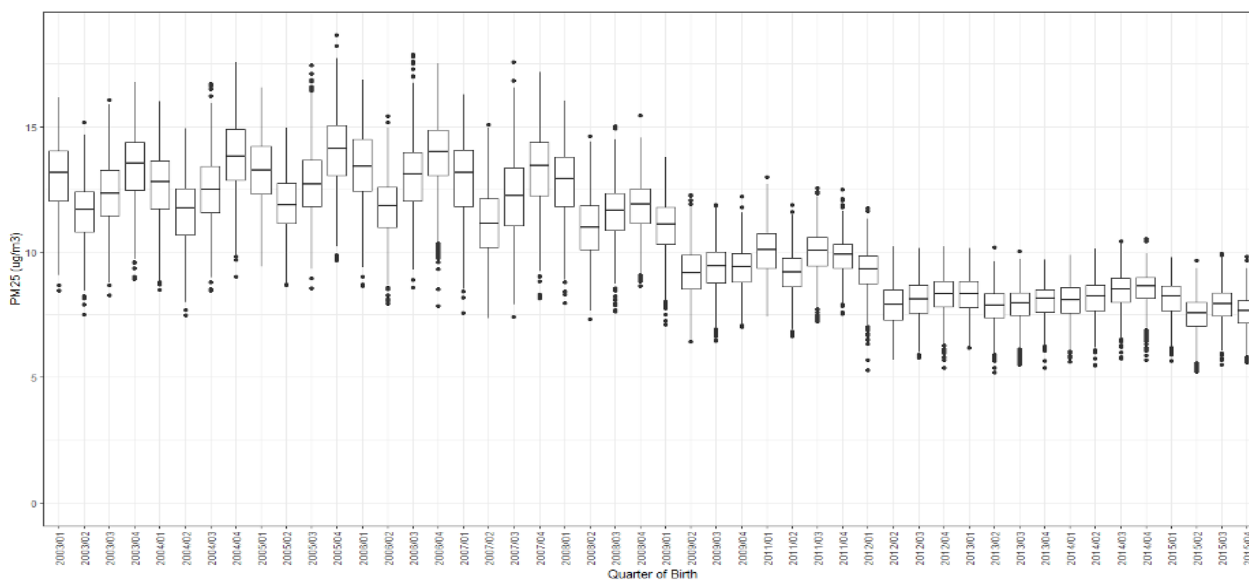


a)

b)

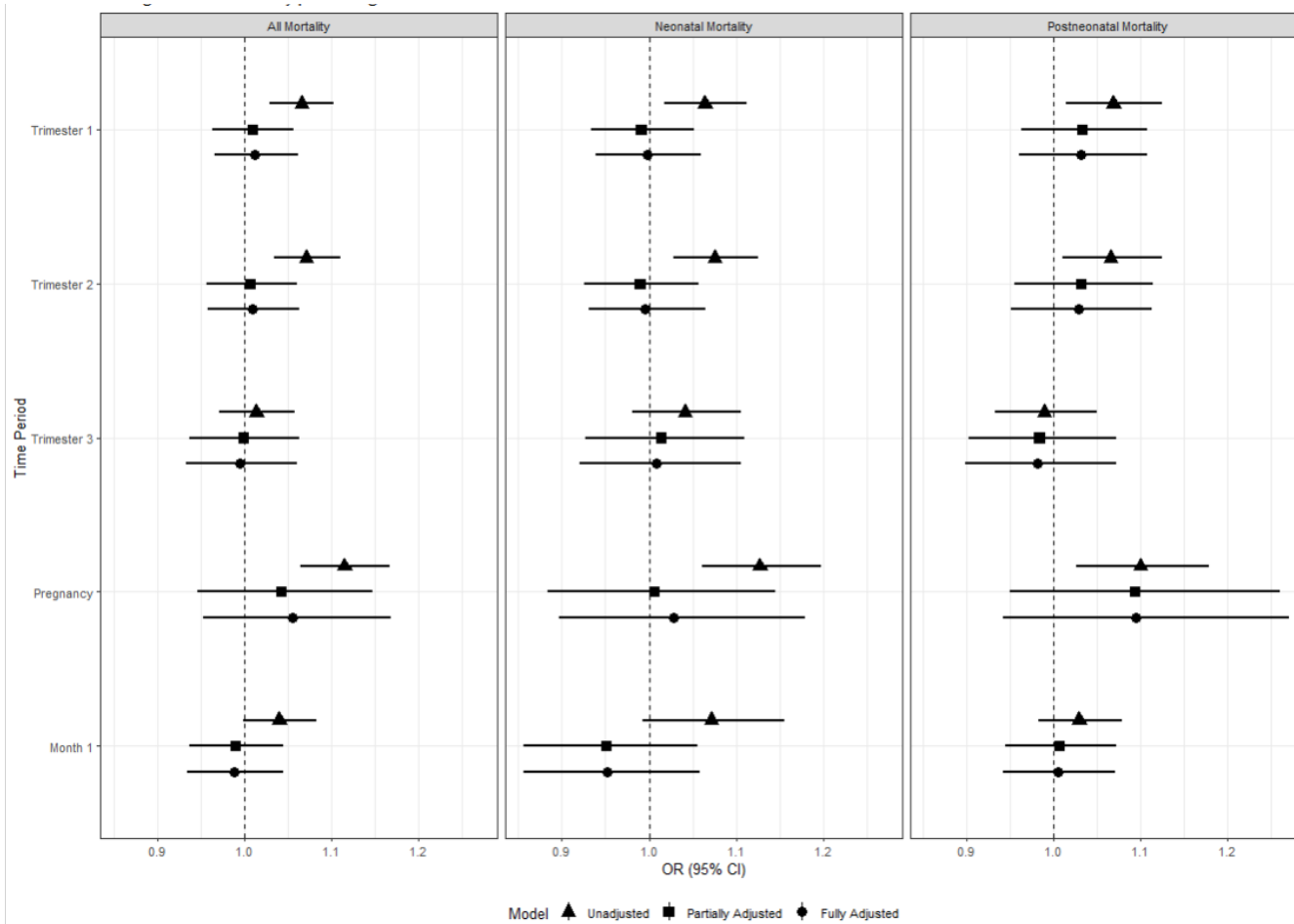


c)



d)

Supplemental Figure S3: Descriptive boxplots of PM_{2.5} by year and quarter in analytical dataset and analytical sample: Estimates are reported for full pregnancy exposure. a) Analytical dataset by yearly PM_{2.5} b) Analytical sample by yearly PM_{2.5} c) Analytical dataset by quarterly PM_{2.5}. (1) Jan-Mar (2) Apr-June (3) July-Sept (4) Oct-Dec. d) Analytical sample by quarterly PM_{2.5}.



Supplemental Figure S4: Results for all infant, neonatal, and postneonatal mortality from logistic regression sample per 4.0 µg/m³ increase in PM_{2.5}: This figure presents unadjusted (triangle), partially adjusted (square) and fully adjusted (circle) results in a forest plot from the logistic regression of all five critical exposure periods (each trimester, pregnancy, and month one) for all infant mortality, neonatal infant mortality and postneonatal infant mortality. Partially adjusted model includes adjustment for individual level covariates (birthing parent and infant characteristics) with fully adjusted model also including community level characteristics. Confidence Interval (CI). Odds Ratio (OR).