Supplementary Materials

Table S1 SHS $PM_{2.5}$ concentrations in restaurants and bars by different time of day and different day of week, $\mu g/m^3$, Minnesota, 2007

				SHS $PM_{2.5}$, mean (SE)				
			n of visit	venue avg unweighted [a]	venue avg weighted 1 [b]	patrons_smks weighted 2 [c]	patrons_nsmks weighted 3 [d]	workers weighted 4 [e]
Restaurants	weekday	Lunch	142	35 (5)	40 (13)	75 (36)	14 (3)	36 (14)
		Dinner	154	71 (7)	66 (13)	105 (13)	26 (4)	65 (10)
		Evening	154	64 (6)	59 (10)	105 (17)	27 (6)	59 (11)
	Friday	Lunch	134	30 (4)	36 (10)	76 (29)	12 (5)	34 (12)
		Dinner	187	91 (7)	87 (16)	136 (24)	39 (5)	83 (14)
		Evening	160	108 (9)	98 (14)	158 (14)	54 (13)	107 (11)
	Saturday	Lunch	150	29 (4)	29 (7)	66 (21)	9 (2)	32 (8)
		Dinner	188	53 (4)	59 (9)	93 (15)	32 (7)	51 (7)
		Evening	165	90 (9)	76 (13)	151 (42)	31 (6)	88 (21)
	Sunday	Lunch	127	31 (4)	34 (5)	57 (11)	10 (3)	32 (6)
		Dinner	127	60 (7)	50 (11)	92 (17)	24 (4)	52 (10)
		Evening	140	61 (7)	58 (10)	98 (16)	17 (2)	56 (10)
Bars	weekday	Lunch	62	31 (6)	38 (8)	43 (13)	9 (1)	28 (6)
		Dinner	65	136 (17)	158 (51)	197 (56)	54 (10)	140 (38)
		Evening	61	155 (19)	159 (27)	181 (25)	62 (19)	156 (18)
	Friday	Lunch	63	27 (4)	29 (5)	29 (5)	24 (1)	22 (4)
		Dinner	66	180 (24)	191 (42)	217 (63)	51 (5)	164 (36)
		Evening	77	155 (19)	133 (18)	189 (32)	32 (4)	151 (21)
	Saturday	Lunch	61	45 (10)	51 (16)	88 (26)	26 (3)	38 (9)
		Dinner	70	114 (11)	124 (25)	129 (24)	49 (4)	105 (17)
		Evening	75	154 (22)	150 (27)	214 (36)	54 (3)	155 (26)
	Sunday	Lunch	56	41 (9)	56 (18)	78 (16)	4 (3)	48 (12)
		Dinner	58	91 (14)	112 (24)	145 (29)	49 (4)	95 (15)
		Evening	64	99 (11)	123 (28)	166 (47)	145 (9)	139 (33)
All	weekday	Lunch	204	34 (4)	40 (8)	63 (24)	14 (2)	33 (10)
		Dinner	219	90 (7)	98 (20)	143 (26)	31 (4)	90 (13)
		Evening	215	89 (8)	95 (12)	140 (15)	33 (7)	90 (10)
	Friday	Lunch	197	29 (3)	33 (7)	60 (21)	15 (4)	30 (9)
		Dinner	253	114 (8)	123 (18)	170 (29)	42 (4)	105 (13)
		Evening	237	123 (9)	111 (11)	172 (16)	53 (12)	120 (9)
	Saturday	Lunch	211	34 (4)	38 (7)	75 (16)	12 (3)	34 (6)
		Dinner	258	69 (5)	82 (11)	107 (13)	34 (6)	66 (7)
		Evening	240	110 (9)	103 (13)	178 (28)	35 (6)	109 (17)
	Sunday	Lunch	183	34 (4)	43 (8)	65 (9)	9 (3)	36 (5)
		Dinner	212	68 (6)	71 (11)	113 (16)	27 (5)	64 (8)
		Evening	204	73 (6)	84 (13)	130 (25)	52 (26)	84 (15)
Total			2633	72 (6)	78 (9)	134 (12)	30 (4)	78 (7)

[a] Sample average SHS $PM_{2.5}$ concentration without any weighting;

[b] Average SHS-$PM_{2.5}$ concentration by venue type, weighted to estimate average concentrations in the smoking venue/sections before the statewide ban went into effect (weight 1);

[c] Average SHS-$PM_{2.5}$ concentration to which patrons visiting only smoking venues/sections are exposed. Weighted by weight 1 and number of patrons in each smoking venue/section (weight 2);

[d] Average SHS $PM_{2.5}$ concentration to which patrons visiting only designated non-smoking sections are exposed. Weighted by weight 1 and number of patrons in these section (weight 3);
[e] Average SHS $PM_{2.5}$ concentration to which servers working in smoking-permitted restaurants and bars are exposed. Weighted by weight 1 and the proportion of time spent working in designated smoking sections and nonsmoking sections if present (weight 4).

Table S2 Emission factors (EFs) from the literature for SHS specific compounds and volatile organic compounds and ratios of EFs and side-by-side field measurements to $PM_{2.5}$ or 3-Ethenylpridine (3EP)

	Mean EF [a] µg/cig	range of EF [b] µg/cig	ratio of EF_{PM}/EF_{VOC}	ratio of C_{PM}/C_{VOC} [c]	ratio of EF_{VOC}/EF_{3EP}	ratio of C_{VOC}/C_{3EP} [d]
Selected SHS tracers with field measurements						
Pyridine	348	60-530	35.8	22.4	0.83	1.50
Pyrrole	373	230-460	33.4	35.3	0.88	0.97
3,4-Picoline	312	264-350	40.0	41.3	0.74	0.60
3-Ethenylpridine	422	84-660	29.5	36.3	1.00	1.00
Nicotine	1274	396-3070	9.8	14.4	3.02	1.80
Myosmine	122	83-160	102.6	169.3	0.29	0.20
$PM_{2.5}$	12471	8100-17000	1.0	1.0	29.5	36.3
Volatile organic compounds						
Acetaldehyde	2292	2042-2496	5.4		5.4	
Acetonitrile	952	858-1069	13.1		2.3	
Acrolein	363	284-404	34.4		0.9	
Acrylonitrile	170	99-250	73.4		0.4	
Benzene	431	263-590	28.9		1.0	
1,3-Butadiene	279	157-400	44.6		0.7	
2-Butanone	323	166-540	38.6		0.8	
Cresol	109	62-148	114.1		0.3	
Ethylbenzene	131	101-170	95.3		0.3	
Formaldehyde	1101	243-1333	11.3		2.6	
Isoprene	2400	1990-2810	5.2		5.7	
Methylnaphthalene	51	41-61	244.5		0.1	
Naphthalene	45	34-55	280.3		0.1	
Phenol	157	26-360	79.3		0.4	
Styrene	160	141-210	78.1		0.4	
1,2,4-Trimethylbenzene	56	25-74	221.3		0.1	
Toluene	777	364-1270	16.0		1.8	
Xylene	400	135-571	31.2		0.9	
N-Nitrosodimethylamine	0.57	0.34-0.79	22073		0.0013	
N-Nitrosopyrrolidine	0.10	0.07-0.14	119918		0.00025	

[a] average of emission factors (EFs) reported by. [1-10]

[b] range of EFs indicates the range of means of EFs reported by different studies, except N-Nitrosodimethylamine and N-Nitrosopyrrolidine, for which ranges represent 95% confidence intervals reported in the single study by [7];

[c] ratios of concentration of $PM_{2.5}$(C_{PM}) to concentration of volatile organic compound (C_{VOC}) were derived from simple liner regression analysis of 186 side-by-side 2-hour measurements of $PM_{2.5}$ and SHS-VOC tracers;

[d] ratios of concentration of volatile organic compound (C_{VOC}) and concentration of 3-Ethenylpridine (3EP, C_{3EP}) were from simple linear regression analysis of 186 valid side-by-side 2-hour measurements of 3EP and other SHS tracers listed on the table.

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