

Title: Heat-related mortality in Mexico: a multi-scale spatial analysis of extreme heat effects and municipality-level vulnerability

Supplementary Appendix

Supplementary Table 1: Age and gender distribution of deaths in Mexico, 1998-2020.

	Number of deaths	% deaths
Age		
<1	695,213	5.18
1-19	47,9640	3.57
20-44	1,770,699	13.19
45-64	3,135,097	23.35
65+	7,279,009	54.21
<i>unspecified</i>	67,273	0.50
Sex		
<i>women</i>	5,891,093	43.88
<i>men</i>	7,528,371	56.07
<i>unspecified</i>	7,467	0.05
<i>Total</i>	13,426,931	100

Supplementary Table 2: Results of case-crossover analysis of overall effect of extreme heat on mortality in Mexico for main analysis (99th maximum) and sensitivity analysis using different measures of extreme heat events on the relative and absolute scales.

Extreme heat	OR	95% CI
99 th maximum	1.083	[1.076, 1.09]
95 th maximum	1.061	[1.057, 1.064]
99 th minimum	1.044	[1.037, 1.05]
95 th minimum	1.022	[1.018, 1.025]
> 30°C	1.028	[1.025, 1.03]
> 35°C	1.061	[1.057, 1.065]
2-day 99 th maximum	1.088	[1.078, 1.099]
1-day lag 99 th maximum	1.071	[1.063, 1.078]
2-day lag 99 th maximum	1.05	[1.043, 1.057]

Supplementary Table 3: Odds ratios and confidence intervals for sensitivity analysis at state-level of differing extreme heat metrics, 1998-2019.

state	state name	extreme heat event	OR	lower_ci	upper_ci
1	Aguascalientes	hw_99	1.036	0.962	1.115
1	Aguascalientes	hw_95	1.046	1.008	1.085
1	Aguascalientes	hw_99_min	0.985	0.920	1.056
1	Aguascalientes	hw_95_min	0.987	0.952	1.024
1	Aguascalientes	hw_30abs	1.050	1.022	1.078
1	Aguascalientes	hw_35abs	1.092	0.935	1.275
1	Aguascalientes	hw_99_lag1	1.028	0.954	1.108
1	Aguascalientes	hw_99_lag2	1.030	0.955	1.110
1	Aguascalientes	hw_99_2	0.973	0.883	1.072
1	Aguascalientes	hw_99	1.036	0.962	1.115
2	Baja California	hw_99_min	1.138	1.094	1.184
2	Baja California	hw_95_min	1.061	1.040	1.083
2	Baja California	hw_30abs	1.051	1.034	1.067
2	Baja California	hw_99	1.110	1.069	1.152
2	Baja California	hw_95	1.085	1.065	1.106
2	Baja California	hw_99	1.110	1.069	1.152
2	Baja California	hw_99_2	1.154	1.090	1.220
2	Baja California	hw_35abs	1.041	1.016	1.067
2	Baja California	hw_99_lag1	1.121	1.080	1.164
2	Baja California	hw_99_lag2	1.121	1.080	1.164
3	Baja California Sur	hw_99	0.983	0.897	1.077
3	Baja California Sur	hw_95	1.047	0.996	1.101
3	Baja California Sur	hw_99_min	0.936	0.850	1.030
3	Baja California Sur	hw_99_2	0.936	0.806	1.088
3	Baja California Sur	hw_30abs	0.993	0.960	1.027
3	Baja California Sur	hw_35abs	1.059	1.024	1.096
3	Baja California Sur	hw_99_lag1	1.047	0.957	1.145
3	Baja California Sur	hw_95_min	0.962	0.910	1.016
3	Baja California Sur	hw_99	0.983	0.897	1.077
3	Baja California Sur	hw_99_lag2	1.017	0.928	1.116
4	Campeche	hw_99_min	1.195	1.104	1.293
4	Campeche	hw_99	1.215	1.110	1.329
4	Campeche	hw_95	1.112	1.064	1.162
4	Campeche	hw_95_min	1.028	0.987	1.070
4	Campeche	hw_30abs	1.040	1.011	1.069
4	Campeche	hw_35abs	1.069	1.043	1.097
4	Campeche	hw_99_lag1	1.158	1.057	1.268
4	Campeche	hw_99_lag2	1.087	0.992	1.191
4	Campeche	hw_99_2	1.249	1.104	1.413
4	Campeche	hw_99	1.215	1.110	1.329
5	Coahuila de Zaragoza	hw_99	1.102	1.057	1.149
5	Coahuila de Zaragoza	hw_95	1.080	1.056	1.104
5	Coahuila de Zaragoza	hw_99_min	1.070	1.025	1.116
5	Coahuila de Zaragoza	hw_30abs	1.024	1.009	1.039
5	Coahuila de Zaragoza	hw_35abs	1.065	1.047	1.083
5	Coahuila de Zaragoza	hw_99_lag1	1.086	1.042	1.133
5	Coahuila de Zaragoza	hw_95_min	1.056	1.033	1.080
5	Coahuila de Zaragoza	hw_99	1.102	1.057	1.149
5	Coahuila de Zaragoza	hw_99_2	1.076	1.011	1.145
5	Coahuila de Zaragoza	hw_99_lag2	1.058	1.014	1.104
6	Colima	hw_99	1.046	0.968	1.130
6	Colima	hw_95	1.032	0.991	1.076
6	Colima	hw_99_min	1.070	0.995	1.151
6	Colima	hw_30abs	1.041	1.002	1.080
6	Colima	hw_35abs	1.072	1.039	1.105
6	Colima	hw_99_lag1	0.990	0.916	1.070
6	Colima	hw_95_min	1.015	0.976	1.056
6	Colima	hw_99_2	1.001	0.856	1.171
6	Colima	hw_99_lag2	1.048	0.971	1.131
6	Colima	hw_99	1.046	0.968	1.130
7	Chiapas	hw_99	1.049	1.013	1.087
7	Chiapas	hw_95	1.054	1.035	1.073
7	Chiapas	hw_99	1.049	1.013	1.087
7	Chiapas	hw_35abs	1.065	1.046	1.084
7	Chiapas	hw_99_lag1	1.023	0.988	1.060

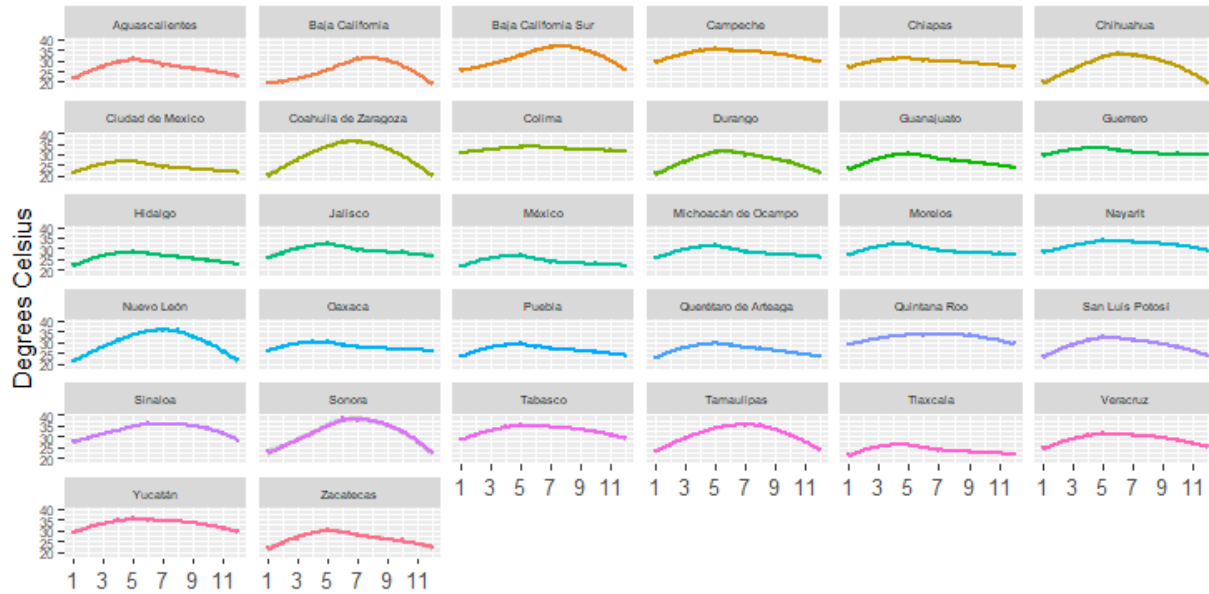
7	Chiapas	hw_99_lag2	1.000	0.965	1.036
7	Chiapas	hw_99_2	1.036	0.983	1.092
7	Chiapas	hw_30abs	1.014	1.002	1.027
7	Chiapas	hw_99_min	1.006	0.972	1.041
7	Chiapas	hw_95_min	1.017	1.000	1.035
8	Chihuahua	hw_95	1.073	1.053	1.093
8	Chihuahua	hw_99	1.098	1.061	1.137
8	Chihuahua	hw_35abs	1.059	1.044	1.075
8	Chihuahua	hw_99_min	1.076	1.039	1.115
8	Chihuahua	hw_95_min	1.051	1.031	1.071
8	Chihuahua	hw_30abs	1.029	1.017	1.042
8	Chihuahua	hw_99	1.098	1.061	1.137
8	Chihuahua	hw_99_lag1	1.099	1.061	1.138
8	Chihuahua	hw_99_lag2	1.115	1.077	1.154
8	Chihuahua	hw_99_2	1.120	1.069	1.173
9	Distrito Federal	hw_99_min	1.009	0.989	1.029
9	Distrito Federal	hw_99_lag1	1.032	1.012	1.053
9	Distrito Federal	hw_95_min	0.999	0.990	1.009
9	Distrito Federal	hw_30abs	1.045	1.033	1.058
9	Distrito Federal	hw_35abs	NA	NA	NA
9	Distrito Federal	hw_99	1.070	1.049	1.091
9	Distrito Federal	hw_99_lag2	1.017	0.997	1.038
9	Distrito Federal	hw_99_2	1.058	1.030	1.086
9	Distrito Federal	hw_99	1.070	1.049	1.091
9	Distrito Federal	hw_99	1.070	1.049	1.091
9	Distrito Federal	hw_95	1.038	1.027	1.049
9	Distrito Federal	hw_99	1.070	1.049	1.091
10	Durango	hw_99	1.018	0.961	1.077
10	Durango	hw_99_min	1.035	0.977	1.097
10	Durango	hw_95_min	1.012	0.982	1.043
10	Durango	hw_30abs	1.021	1.001	1.042
10	Durango	hw_35abs	1.042	1.010	1.075
10	Durango	hw_99_lag1	1.095	1.035	1.158
10	Durango	hw_99_lag2	1.011	0.955	1.071
10	Durango	hw_99_2	1.080	1.004	1.163
10	Durango	hw_95	1.046	1.015	1.078
10	Durango	hw_99	1.018	0.961	1.077
11	Guanajuato	hw_99	1.072	1.038	1.108
11	Guanajuato	hw_95	1.065	1.048	1.083
11	Guanajuato	hw_30abs	1.042	1.031	1.054
11	Guanajuato	hw_35abs	1.083	1.035	1.133
11	Guanajuato	hw_99_min	1.023	0.991	1.055
11	Guanajuato	hw_95_min	0.999	0.984	1.015
11	Guanajuato	hw_99_2	1.082	1.039	1.127
11	Guanajuato	hw_99	1.072	1.038	1.108
11	Guanajuato	hw_99_lag1	1.079	1.044	1.115
11	Guanajuato	hw_99_lag2	1.070	1.036	1.106
12	Guerrero	hw_95	1.067	1.045	1.090
12	Guerrero	hw_99	1.089	1.047	1.133
12	Guerrero	hw_35abs	1.070	1.050	1.090
12	Guerrero	hw_99_min	1.081	1.038	1.125
12	Guerrero	hw_95_min	1.040	1.019	1.061
12	Guerrero	hw_30abs	1.017	1.000	1.035
12	Guerrero	hw_99	1.089	1.047	1.133
12	Guerrero	hw_99_lag1	1.044	1.003	1.087
12	Guerrero	hw_99_lag2	1.032	0.991	1.074
12	Guerrero	hw_99_2	1.073	1.010	1.139
13	Hidalgo	hw_99	1.063	1.014	1.114
13	Hidalgo	hw_35abs	1.097	1.047	1.150
13	Hidalgo	hw_99_lag1	1.006	0.959	1.056
13	Hidalgo	hw_99_lag2	1.016	0.968	1.066
13	Hidalgo	hw_99_2	0.991	0.928	1.057
13	Hidalgo	hw_30abs	1.004	0.981	1.027
13	Hidalgo	hw_95	1.053	1.029	1.078
13	Hidalgo	hw_99_min	1.029	0.986	1.074
13	Hidalgo	hw_95_min	1.013	0.990	1.036
13	Hidalgo	hw_99	1.063	1.014	1.114
14	Jalisco	hw_99	1.077	1.050	1.106
14	Jalisco	hw_99_min	1.027	1.002	1.053
14	Jalisco	hw_95_min	1.012	1.000	1.025

14	Jalisco	hw_30abs	1.030	1.021	1.039
14	Jalisco	hw_95	1.059	1.045	1.074
14	Jalisco	hw_99	1.077	1.050	1.106
14	Jalisco	hw_35abs	1.057	1.033	1.081
14	Jalisco	hw_99_lag1	1.089	1.061	1.117
14	Jalisco	hw_99_lag2	1.068	1.040	1.096
14	Jalisco	hw_99_2	1.084	1.047	1.122
15	Mexico	hw_99_min	1.006	0.987	1.026
15	Mexico	hw_95_min	0.993	0.983	1.004
15	Mexico	hw_30abs	1.039	1.023	1.055
15	Mexico	hw_35abs	1.083	0.967	1.213
15	Mexico	hw_99_lag1	1.023	1.001	1.044
15	Mexico	hw_99_lag2	1.004	0.983	1.026
15	Mexico	hw_99_2	1.017	0.990	1.045
15	Mexico	hw_99	1.042	1.021	1.064
15	Mexico	hw_95	1.022	1.011	1.034
15	Mexico	hw_99	1.042	1.021	1.064
16	Michoacan de Ocampo	hw_99	1.093	1.056	1.132
16	Michoacan de Ocampo	hw_99_2	1.099	1.051	1.149
16	Michoacan de Ocampo	hw_30abs	1.026	1.012	1.040
16	Michoacan de Ocampo	hw_95	1.051	1.032	1.071
16	Michoacan de Ocampo	hw_99_min	1.032	0.999	1.066
16	Michoacan de Ocampo	hw_95_min	0.995	0.978	1.012
16	Michoacan de Ocampo	hw_99	1.093	1.056	1.132
16	Michoacan de Ocampo	hw_35abs	1.029	1.001	1.058
16	Michoacan de Ocampo	hw_99_lag1	1.086	1.048	1.124
16	Michoacan de Ocampo	hw_99_lag2	1.066	1.030	1.105
17	Morelos	hw_99	1.100	1.037	1.166
17	Morelos	hw_95	1.074	1.043	1.106
17	Morelos	hw_99_min	1.030	0.976	1.087
17	Morelos	hw_95_min	1.017	0.991	1.044
17	Morelos	hw_30abs	1.031	1.014	1.048
17	Morelos	hw_99	1.100	1.037	1.166
17	Morelos	hw_35abs	1.097	1.048	1.148
17	Morelos	hw_99_lag1	1.096	1.034	1.163
17	Morelos	hw_99_lag2	1.049	0.988	1.114
17	Morelos	hw_99_2	1.123	1.041	1.211
18	Nayarit	hw_35abs	1.068	1.029	1.109
18	Nayarit	hw_99_lag1	1.025	0.955	1.100
18	Nayarit	hw_99_lag2	0.998	0.930	1.071
18	Nayarit	hw_99_2	0.989	0.878	1.114
18	Nayarit	hw_99	1.052	0.980	1.128
18	Nayarit	hw_95	1.068	1.030	1.107
18	Nayarit	hw_99_min	1.018	0.953	1.089
18	Nayarit	hw_95_min	1.011	0.974	1.048
18	Nayarit	hw_30abs	1.038	1.017	1.061
18	Nayarit	hw_99	1.052	0.980	1.128
19	Nuevo Leon	hw_99	1.114	1.078	1.151
19	Nuevo Leon	hw_95	1.074	1.056	1.092
19	Nuevo Leon	hw_99_min	1.057	1.025	1.090
19	Nuevo Leon	hw_95_min	1.028	1.012	1.045
19	Nuevo Leon	hw_99	1.114	1.078	1.151
19	Nuevo Leon	hw_35abs	1.054	1.042	1.065
19	Nuevo Leon	hw_99_lag1	1.124	1.088	1.162
19	Nuevo Leon	hw_99_lag2	1.127	1.091	1.164
19	Nuevo Leon	hw_30abs	1.019	1.009	1.029
19	Nuevo Leon	hw_99_2	1.182	1.129	1.237
20	Oaxaca	hw_99_2	1.090	1.035	1.149
20	Oaxaca	hw_99	1.054	1.015	1.095
20	Oaxaca	hw_95	1.056	1.036	1.076
20	Oaxaca	hw_99_min	1.037	1.001	1.075
20	Oaxaca	hw_95_min	1.023	1.004	1.041
20	Oaxaca	hw_30abs	1.014	1.002	1.027
20	Oaxaca	hw_35abs	1.075	1.057	1.094
20	Oaxaca	hw_99_lag1	1.061	1.022	1.102
20	Oaxaca	hw_99_lag2	1.046	1.007	1.087
20	Oaxaca	hw_99	1.054	1.015	1.095
21	Puebla	hw_99	1.013	0.984	1.043
21	Puebla	hw_95	1.041	1.026	1.057
21	Puebla	hw_99_min	0.997	0.969	1.025

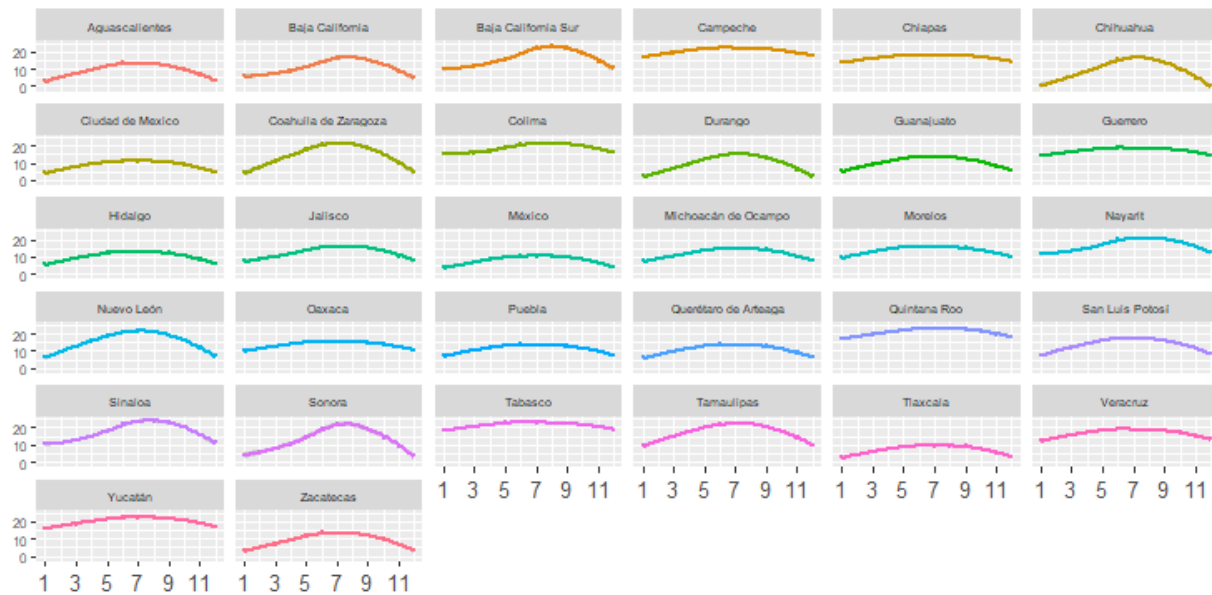
21	Puebla	hw_95_min	1.009	0.995	1.023
21	Puebla	hw_30abs	1.029	1.015	1.042
21	Puebla	hw_35abs	1.107	1.065	1.151
21	Puebla	hw_99_lag1	1.026	0.997	1.057
21	Puebla	hw_99_lag2	0.987	0.958	1.016
21	Puebla	hw_99_2	1.034	0.992	1.078
21	Puebla	hw_99	1.013	0.984	1.043
22	Queretaro	hw_95	1.040	1.009	1.072
22	Queretaro	hw_99_min	1.022	0.968	1.079
22	Queretaro	hw_95_min	0.991	0.963	1.019
22	Queretaro	hw_99	1.070	1.011	1.134
22	Queretaro	hw_99	1.070	1.011	1.134
22	Queretaro	hw_35abs	1.076	0.953	1.216
22	Queretaro	hw_99_lag1	1.060	1.000	1.123
22	Queretaro	hw_99_lag2	1.079	1.019	1.142
22	Queretaro	hw_99_2	1.078	1.004	1.158
22	Queretaro	hw_30abs	1.025	1.002	1.049
23	Quintana Roo	hw_95	1.021	0.984	1.060
23	Quintana Roo	hw_99_min	1.022	0.953	1.096
23	Quintana Roo	hw_95_min	1.026	0.991	1.062
23	Quintana Roo	hw_99	1.036	0.957	1.121
23	Quintana Roo	hw_35abs	1.004	0.974	1.035
23	Quintana Roo	hw_99_lag1	0.958	0.886	1.036
23	Quintana Roo	hw_99_lag2	1.032	0.955	1.115
23	Quintana Roo	hw_30abs	1.029	1.004	1.054
23	Quintana Roo	hw_99	1.036	0.957	1.121
23	Quintana Roo	hw_99_2	0.959	0.839	1.096
24	San Luis Potosi	hw_99_min	1.077	1.031	1.125
24	San Luis Potosi	hw_95_min	1.049	1.025	1.073
24	San Luis Potosi	hw_30abs	1.051	1.036	1.066
24	San Luis Potosi	hw_99_lag1	1.142	1.090	1.196
24	San Luis Potosi	hw_99_lag2	1.040	0.992	1.091
24	San Luis Potosi	hw_99_2	1.194	1.122	1.271
24	San Luis Potosi	hw_35abs	1.053	1.030	1.077
24	San Luis Potosi	hw_99	1.168	1.116	1.222
24	San Luis Potosi	hw_95	1.078	1.054	1.103
24	San Luis Potosi	hw_99	1.168	1.116	1.222
25	Sinaloa	hw_99	1.094	1.045	1.145
25	Sinaloa	hw_95	1.056	1.033	1.080
25	Sinaloa	hw_99_min	1.081	1.036	1.127
25	Sinaloa	hw_95_min	1.034	1.012	1.057
25	Sinaloa	hw_99_2	1.091	1.016	1.173
25	Sinaloa	hw_30abs	1.008	0.993	1.022
25	Sinaloa	hw_35abs	1.026	1.012	1.040
25	Sinaloa	hw_99_lag1	1.031	0.985	1.079
25	Sinaloa	hw_99_lag2	1.083	1.034	1.133
25	Sinaloa	hw_99	1.094	1.045	1.145
26	Sonora	hw_95	1.073	1.051	1.096
26	Sonora	hw_99_min	1.094	1.050	1.140
26	Sonora	hw_95_min	1.054	1.032	1.077
26	Sonora	hw_99	1.125	1.080	1.172
26	Sonora	hw_35abs	1.029	1.014	1.045
26	Sonora	hw_99_lag1	1.111	1.066	1.158
26	Sonora	hw_99_lag2	1.053	1.010	1.098
26	Sonora	hw_30abs	1.011	0.997	1.025
26	Sonora	hw_99	1.125	1.080	1.172
26	Sonora	hw_99_2	1.164	1.086	1.248
27	Tabasco	hw_35abs	1.071	1.056	1.086
27	Tabasco	hw_99_lag1	1.207	1.147	1.269
27	Tabasco	hw_99_lag2	1.155	1.097	1.215
27	Tabasco	hw_99	1.235	1.174	1.298
27	Tabasco	hw_99	1.235	1.174	1.298
27	Tabasco	hw_95	1.137	1.110	1.165
27	Tabasco	hw_99_min	1.110	1.061	1.161
27	Tabasco	hw_99_2	1.273	1.192	1.360
27	Tabasco	hw_30abs	1.019	1.003	1.036
27	Tabasco	hw_95_min	1.077	1.052	1.102
28	Tamaulipas	hw_95	1.058	1.037	1.079
28	Tamaulipas	hw_99_min	1.059	1.020	1.099
28	Tamaulipas	hw_99	1.124	1.083	1.167

28	Tamaulipas	hw_99	1.124	1.083	1.167
28	Tamaulipas	hw_35abs	1.036	1.021	1.050
28	Tamaulipas	hw_99_lag1	1.102	1.061	1.144
28	Tamaulipas	hw_95_min	1.044	1.024	1.064
28	Tamaulipas	hw_30abs	1.013	1.001	1.026
28	Tamaulipas	hw_99_lag2	1.054	1.015	1.095
28	Tamaulipas	hw_99_2	1.154	1.090	1.221
29	Tlaxcala	hw_99_min	0.992	0.928	1.060
29	Tlaxcala	hw_95_min	0.978	0.946	1.012
29	Tlaxcala	hw_99_lag1	1.000	0.930	1.077
29	Tlaxcala	hw_99_lag2	1.000	0.929	1.077
29	Tlaxcala	hw_30abs	1.011	0.953	1.074
29	Tlaxcala	hw_35abs	8.000	0.725	88.225
29	Tlaxcala	hw_99	1.016	0.945	1.093
29	Tlaxcala	hw_95	1.010	0.973	1.049
29	Tlaxcala	hw_99	1.016	0.945	1.093
29	Tlaxcala	hw_99_2	1.043	0.942	1.155
30	Veracruz de Ignacio de la Llave	hw_95	1.101	1.088	1.113
30	Veracruz de Ignacio de la Llave	hw_99_min	1.123	1.098	1.148
30	Veracruz de Ignacio de la Llave	hw_99	1.143	1.117	1.170
30	Veracruz de Ignacio de la Llave	hw_99	1.143	1.117	1.170
30	Veracruz de Ignacio de la Llave	hw_30abs	1.042	1.034	1.050
30	Veracruz de Ignacio de la Llave	hw_35abs	1.101	1.091	1.112
30	Veracruz de Ignacio de la Llave	hw_99_lag1	1.132	1.106	1.159
30	Veracruz de Ignacio de la Llave	hw_95_min	1.069	1.056	1.082
30	Veracruz de Ignacio de la Llave	hw_99_2	1.192	1.153	1.232
30	Veracruz de Ignacio de la Llave	hw_99_lag2	1.086	1.061	1.112
31	Yucatan	hw_35abs	1.071	1.056	1.087
31	Yucatan	hw_99_lag1	1.136	1.083	1.191
31	Yucatan	hw_99	1.155	1.102	1.210
31	Yucatan	hw_99	1.155	1.102	1.210
31	Yucatan	hw_95	1.119	1.092	1.146
31	Yucatan	hw_99_min	1.062	1.016	1.110
31	Yucatan	hw_95_min	1.054	1.031	1.079
31	Yucatan	hw_30abs	1.004	0.990	1.019
31	Yucatan	hw_99_lag2	1.096	1.045	1.150
31	Yucatan	hw_99_2	1.166	1.095	1.242
32	Zacatecas	hw_99	1.014	0.955	1.077
32	Zacatecas	hw_95	1.076	1.044	1.110
32	Zacatecas	hw_99	1.014	0.955	1.077
32	Zacatecas	hw_35abs	1.222	1.119	1.335
32	Zacatecas	hw_99_min	1.031	0.971	1.095
32	Zacatecas	hw_95_min	1.029	0.999	1.061
32	Zacatecas	hw_30abs	1.031	1.005	1.057
32	Zacatecas	hw_99_lag1	1.041	0.981	1.104
32	Zacatecas	hw_99_lag2	1.049	0.989	1.112
32	Zacatecas	hw_99_2	1.000	0.925	1.080

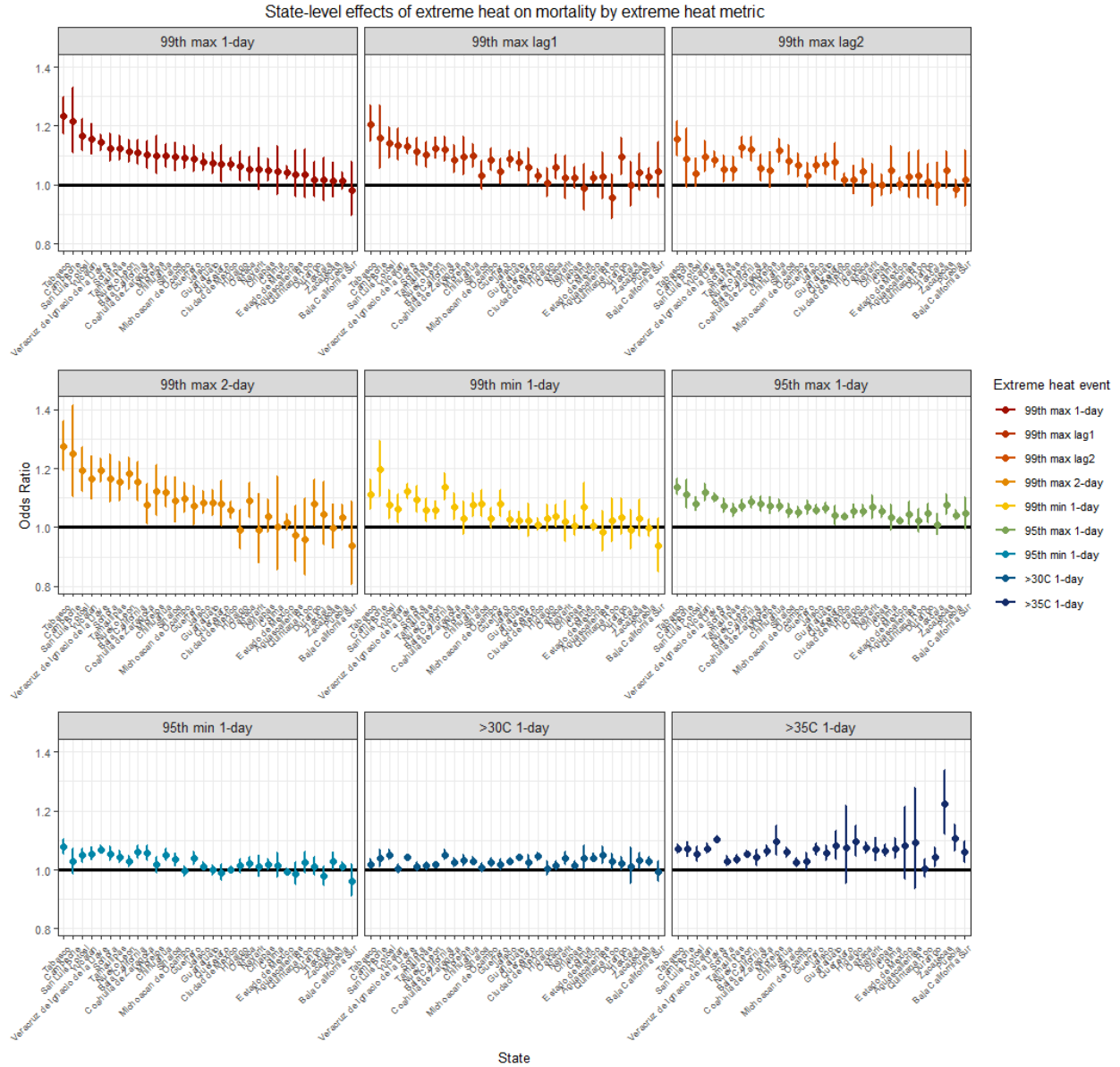
Average Maximum Temperature (°C)



Average Minimum Temperature (°C)

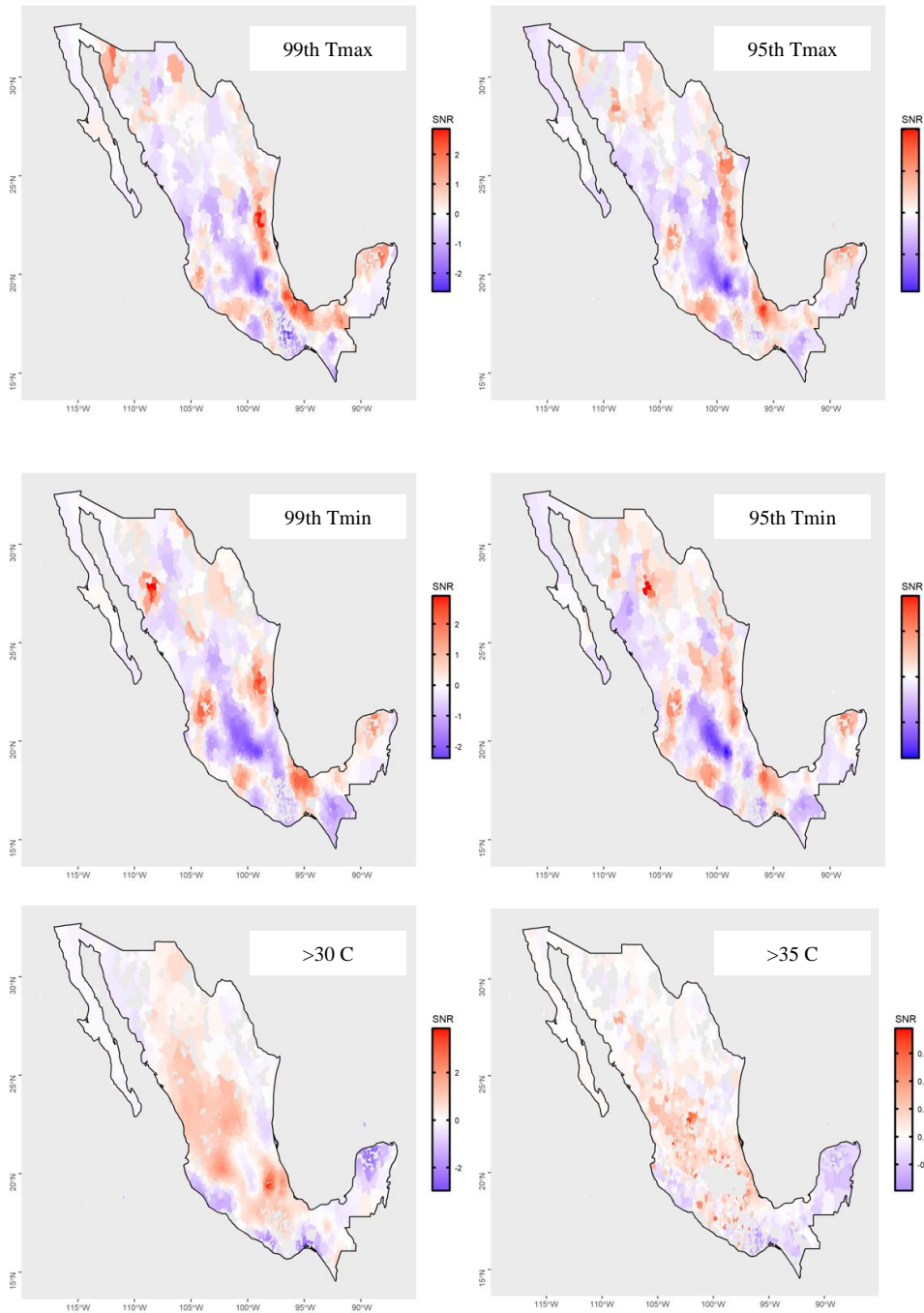


Supplementary Figure 1: Average monthly temperature distribution across 32 Mexican states, 1998-2020.



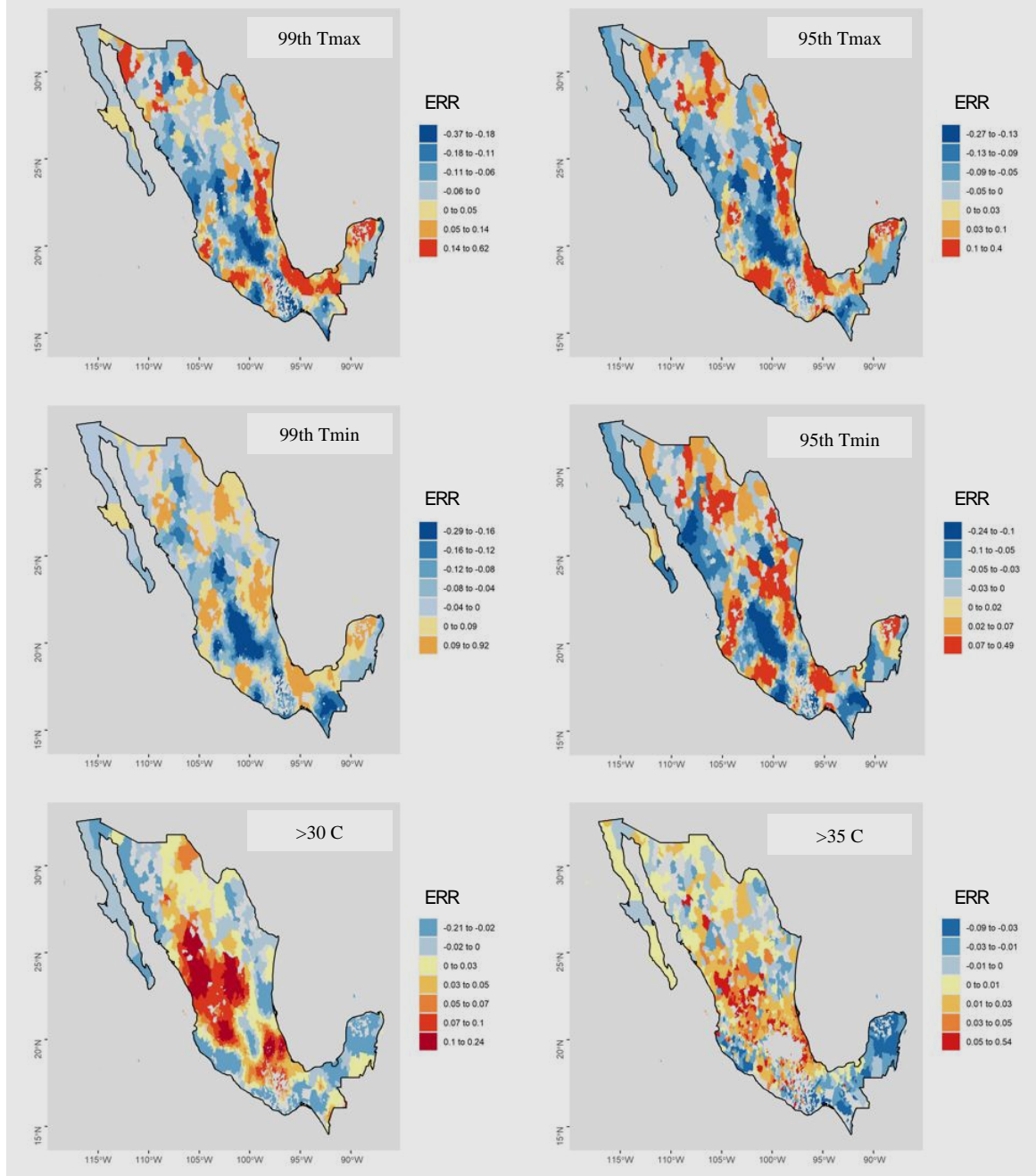
Supplementary Figure 2: State-level effects of extreme heat on mortality using different extreme heat event metrics, 1998-2019.

Municipality-level signal-to-noise ratio (SNR) by extreme heat metric



Supplementary Figure 3: Results of the municipalities with signal-to-noise (SNR) ratio (precise if $|\text{SNR}| > 2$) of the Bayesian resolved estimates of the effect 99th percentile maximum extreme heat events (top left), 95th percentile maximum (top right), 99th percentile minimum (middle right), >95th percentile minimum (middle right), 30°C (bottom left) and >35°C (bottom right) on all-cause mortality across Mexico, 1998-2019.

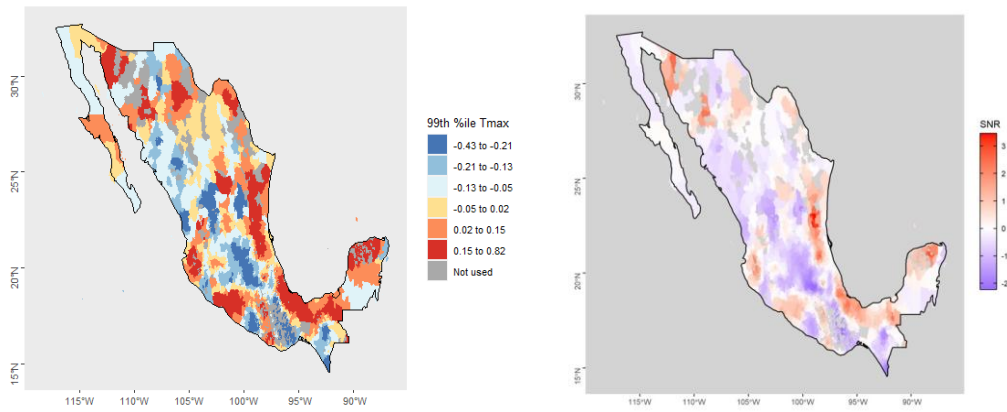
Municipality-level Bayesian resolved estimates by extreme heat metric



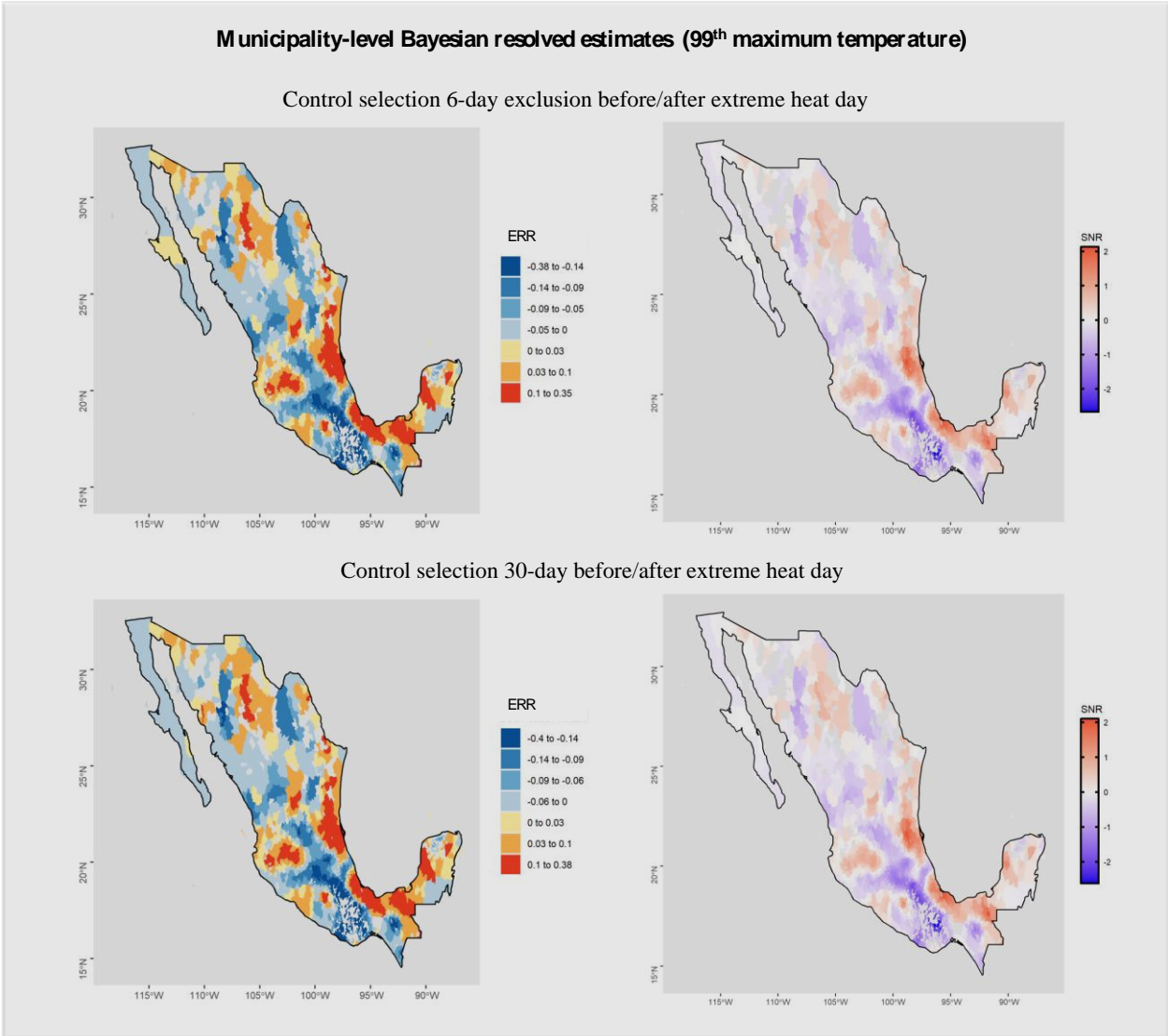
Supplementary Figure 4: Bayesian resolved estimates of the excess relative risk of six measures of extreme heat (99th max, 95th max, 99th min, 95th min, > 30°C, > 35°C).

Municipality-level Bayesian resolved estimates and signal-to-noise ratio (99th maximum temperature)

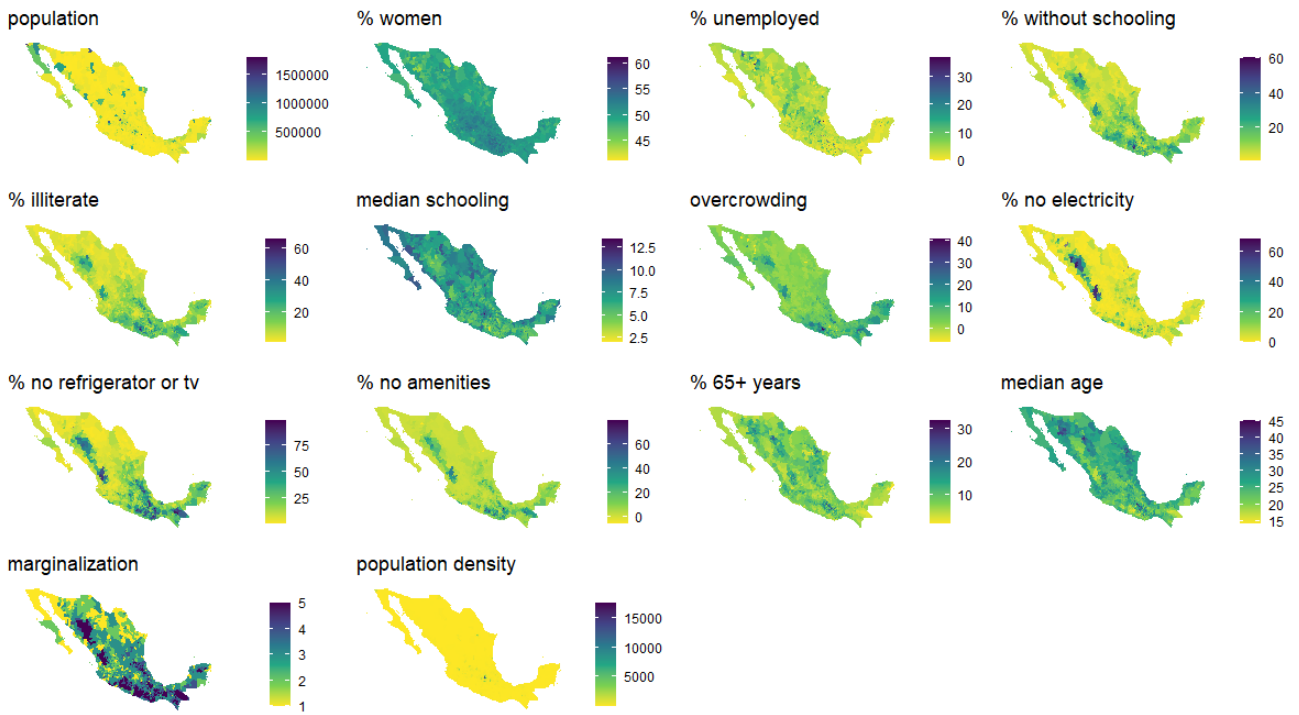
Including 2020 in study period, 1998-2020



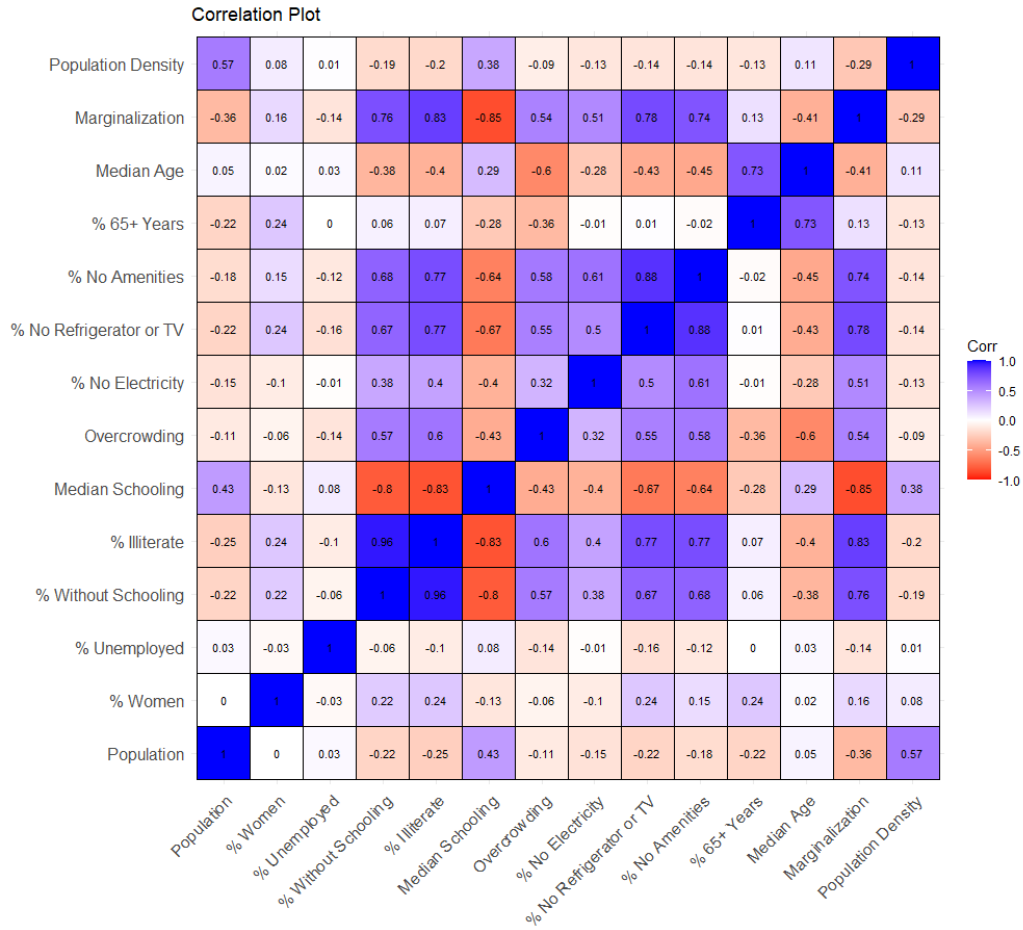
Supplementary Figure 5: Bayesian resolved estimates for ERR (left) and associated signal-to-noise ratio (SNR) (right) for sensitivity analysis in Mexico including 2020 in the study period for the 99th percentile maximum temperature measure of extreme heat, 1998-2020.



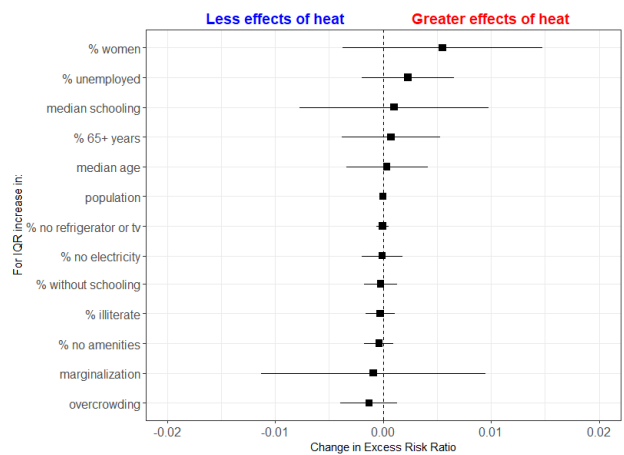
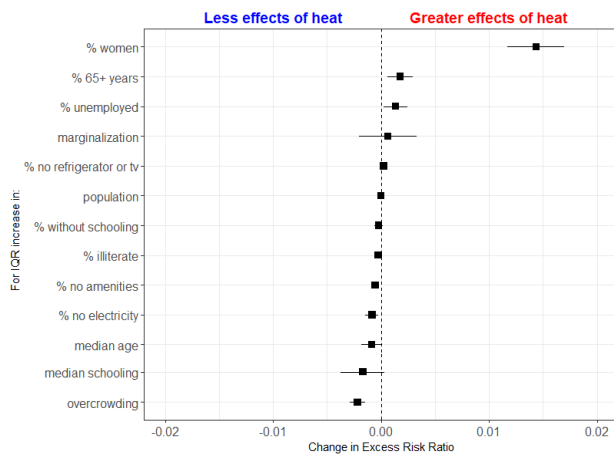
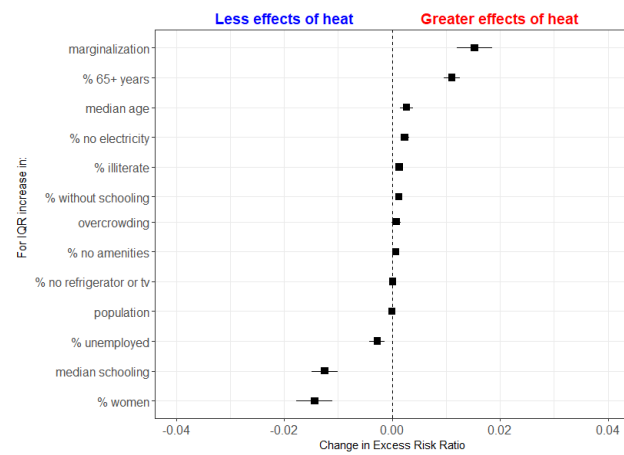
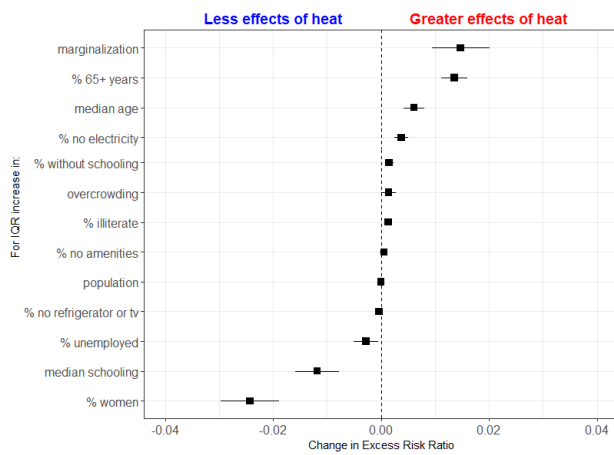
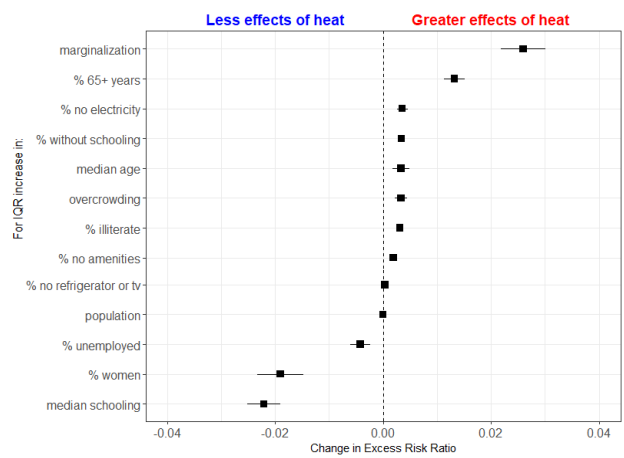
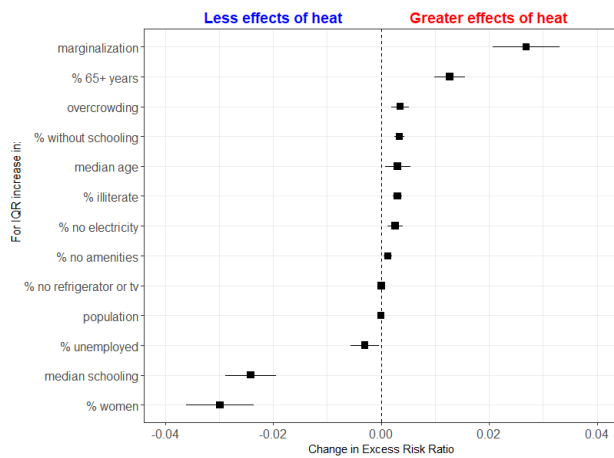
Supplementary Figure 6: Sensitivity analysis of municipality-level analysis using 99th maximum temperature extreme heat events using 6 day exclusion criteria (top) and 30 day before and after extreme heat day as control period (bottom), 1998-2019.



Supplementary Figure 7: Descriptive maps of socio-demographics at municipality-level considered in meta-regression.



Supplementary Figure 8: Correlation matrix of socio-demographics considered in meta-regression.



Supplementary Figure 9: Results of meta-regression for various metrics of extreme heat 99th percentile maximum extreme heat events (top left), 95th percentile maximum (top right), 99th percentile minimum extreme heat events (middle left), >95th percentile minimum (middle right), 30°C (bottom left) and >35°C (bottom right).