Supplementary Table 1: Univariable Poisson regression of environmental factors with heart failure specific readmission

	Heart failure specific readmission	
	Risk ratio	p
PM$_{2.5}$ (per 10µg/m^3)		
Lag$_0$ day	0.94 (0.80, 1.11)	0.49
Lag$_1$ day	1.03 (0.88, 1.21)	0.66
Lag$_2$ day	0.98 (0.83, 1.16)	0.83
Lag$_3$ day	0.97 (0.82, 1.14)	0.67
Lag$_4$ day	1.01 (0.86, 1.19)	0.90
Lag$_5$ day	1.02 (0.87, 1.20)	0.82
Lag$_{1-3}$ day average	1.00 (0.83, 1.20)	0.98
Temperature (per 10°C)		
Lag$_0$ day	0.77 (0.62, 0.95)	0.016
Lag$_1$ day	0.87 (0.70, 1.08)	0.20
Lag$_2$ day	0.75 (0.61, 0.94)	0.012
Lag$_3$ day	0.61 (0.49, 0.77)	<0.001
Lag$_4$ day	0.69 (0.55, 0.86)	0.001
Lag$_5$ day	0.79 (0.64, 0.97)	0.029
Lag$_{1-3}$ day average	0.68 (0.53, 0.87)	0.002
Relative humidity (per 10%)		
Lag$_0$ day	1.15 (1.06, 1.25)	0.001
Lag$_1$ day	1.21 (1.11, 1.31)	<0.001
Lag$_2$ day	1.23 (1.13, 1.34)	<0.001
Lag$_3$ day	1.28 (1.18, 1.39)	<0.001
Lag$_4$ day	1.16 (1.07, 1.26)	<0.001
Lag$_5$ day	1.28 (1.17, 1.39)	<0.001
Lag$_{1-3}$ day average	1.41 (1.27, 1.57)	<0.001

Supplementary Table 2: Comparison between patients who used beta-blockers and those who did not use beta-blockers

	No beta-blockers	Used beta-blockers	p
Age at first admission (years)	79±12	75±12	0.001
Mean NYHA class	2.5±1.0	2.3±0.9	0.001
Charlson comorbidity index	8.6±2.5	7.9±2.6	0.001
Length of first hospital stay (days)	6.3±7.3	5.8±5.9	0.19
Heart rate (bpm)	81±16	78±15	0.001
Respiratory rate (respirations/minute)	19.5±4.5	19.0±3.8	0.029
HFpEF*	38% (74/197)	44% (112/254)	0.16
Living alone	49% (397/812)	45% (411/915)	0.19
Distance from home to			
The closest clinic (km)	0.30±0.60	0.34±0.76	0.35
The closest pharmacy (km)	0.28±0.51	0.35±0.71	0.055

Abbreviation: NYHA (New York Heart Association Classification of heart failure), HFpEF (heart failure with preserved ejection fraction, ≥40%).

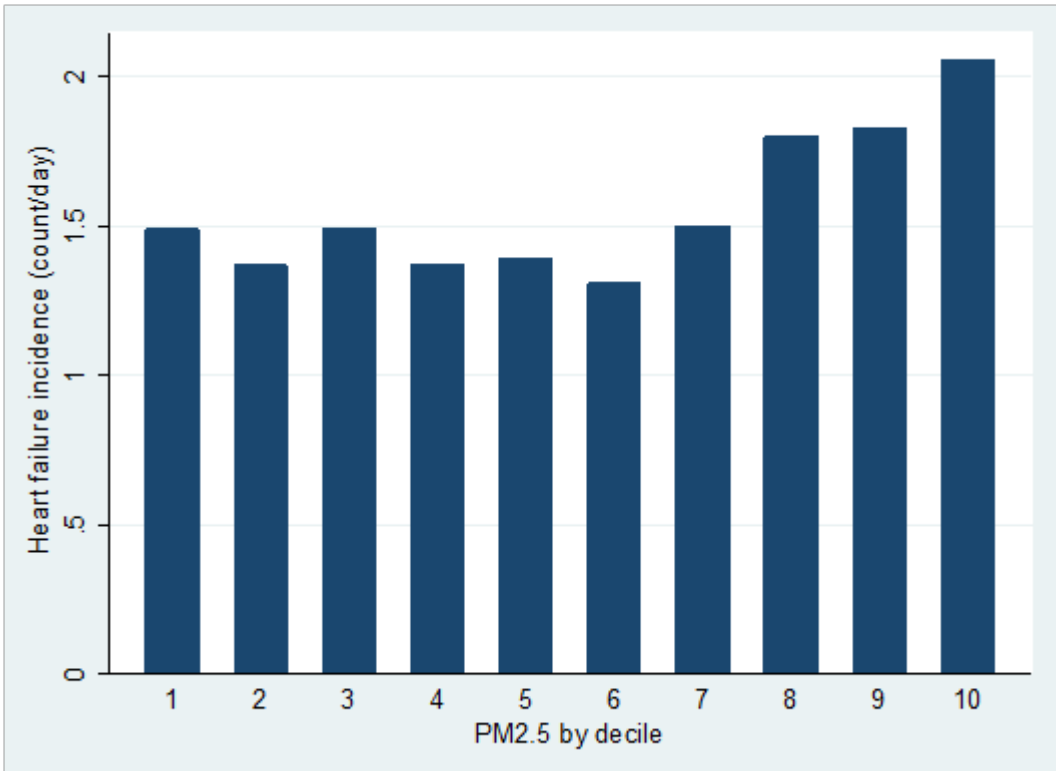*Data available for 451 patients only.

Supplementary Table 3: Comparison between patients who used ACEi/ARB and those who did not use ACEi/ARB

	No ACEi/ARB	Used ACEi/ARB	p
Age at first admission (years)	79±12	76±12	0.002
Mean NYHA class	2.6±1.0	2.3±0.9	<0.001
Charlson comorbidity index	8.8±2.6	8.0±2.5	<0.001
Length of first hospital stay (days)	6.4±7.3	5.9±6.3	0.28
Heart rate (bpm)	82±17	79±15	0.007
Respiratory rate (respirations/minute)	19.8±3.4	19.0±4.4	0.013
HFpEF*	36% (44/121)	44% (144/330)	0.092
Living alone	52% (243/467)	43% (542/1260)	0.011
Distance from home to			
The closest clinic (km)	0.29±0.56	0.34±0.65	0.26
The closest pharmacy (km)	0.33±0.69	0.33±0.69	0.97

Abbreviation: NYHA (New York Heart Association Classification of heart failure), HFpEF (heart failure with preserved ejection fraction, ≥40%).

*Data available for 451 patients only.

Supplementary Figure 1. The association of $PM_{2.5}$ with heart failure incidence