

## Supplementary Material: How Vulnerable are Patients with COPD to Weather Extremities? – A Pilot Study from Hungary

### Healthcare

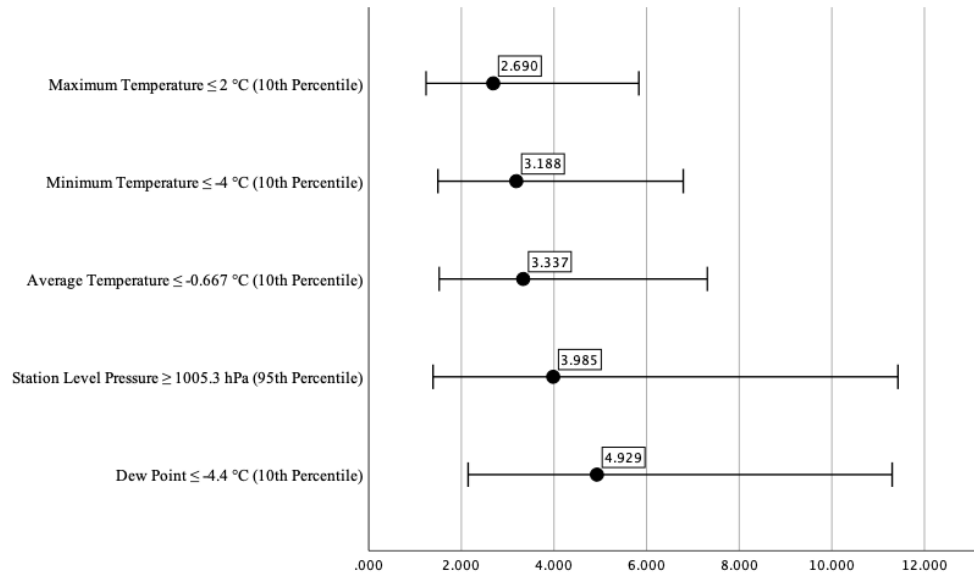
#### *Association between extremes of meteorological parameters and the number of ED visits*

The risk of increased number of ED visits more than doubled when the maximum temperature was at or below the 10<sup>th</sup> percentile ( $OR_{MXT^{10}} = 2.690$  [CI95%  $MXT^{10}$  1.240 – 5.834]), respectively. The odds ratio of increased number of ED visits was 3.188 (CI95% 1.496 – 6.794), when the minimum temperature was at or below the 10<sup>th</sup> percentile, and 3.337 (CI95% 1.523 – 7.314), when the average temperature was at or below the 10<sup>th</sup> percentile. The odds of an increased number of ED visits almost quadrupled ( $OR_{STP^{95}} = 3.985$  (CI95%  $STP^{95}$  1.390 – 11.430)), when the station level pressure was at or above the 95<sup>th</sup> percentile; quintupled ( $OR_{DP^{10}} = 4.929$  (CI95%  $DP^{10}$  2.149 – 11.305)), when the dew point was at or below the 10<sup>th</sup> percentile. Therefore, the meteorological parameters listed above were risk factors for an increased number of ED visits. (SM. Figure S1.)

There was no significant relationship between the 5<sup>th</sup>, 90<sup>th</sup>, 95<sup>th</sup> percentiles of the temperature parameters and the increased number of daily emergency visits. In addition, there was no significant relationship between the 5<sup>th</sup>, 10<sup>th</sup>, 90<sup>th</sup> percentiles of the station level pressure and the increased number of daily emergency visits. No statistically significant relationship was found in the case of precipitation and wind speed either.

The Phi correlation coefficient showed a statistically significant weak relationship between the increased number of ED visits and some of the weather parameters shown in SI. Table S1. The coefficients varied between 0.214 (when the dew point was at or below the 10<sup>th</sup> percentile) and 0.135 (when maximum temperature was at or below the 10<sup>th</sup> percentile). (SM. Table S1.) We did not find a statistically significant relationship between the increased number of ED visits and the rest of the studied weather parameters.

SM. Figure S1. Risk estimation of the effect of extreme meteorological parameters on the number of emergency visits per day.



SM. Table S1. Relationship between the extreme meteorological parameters and the number of emergency visits per day,  $p < 0.05$ .

Weather parameter	Phi correlation coefficient
Dew Point ≤ -4.4 °C (10 <sup>th</sup> Percentile)	0.214
Average Temperature ≤ -0.667 °C (10 <sup>th</sup> Percentile)	0.165
Minimum Temperature ≤ -4 °C (10 <sup>th</sup> Percentile)	0.164
Station Level Pressure ≥ 1005.3 hPa (95 <sup>th</sup> Percentile)	0.144
Maximum Temperature ≤ 2 °C (10 <sup>th</sup> Percentile)	0.135