

## Impact of Air Pollution and Climate on the Incidence of Emergency Interventions in Slavonski Brod

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**Abstract :** Particulate matter belongs to pollutants that can lead to respiratory problems or premature death due to exposure (long-term, short-term) to these substances, all depending on the severity of the effects. The importance of the study is to determine whether the existing climatic conditions in the period from January 1st to August 31st, 2018 increased the number of emergency interventions in Slavonski Brod with regard to pollutants hydrogen sulfide and particles less than 10  $\mu\text{m}$  (PM10) and less than 2.5  $\mu\text{m}$  (PM2.5). Analytical data of the concentration of pollutants are collected from the Croatian Meteorological and Hydrological Service, which monitors the operation of two meteorological stations in Slavonski Brod, as well as climatic conditions. Statistics data of emergency interventions were collected from the Emergency Medicine Department of Slavonski Brod. All data were compared (air pollution, emergency interventions) according to climatic conditions (air humidity and air temperature) and statistically processed. Statistical significance, although weak positive correlation PM2.5 (correlation coefficient 0.147;  $p = 0.036$ ), determined PM10 (correlation coefficient 0.122;  $p = 0.048$ ), hydrogen sulfide (correlation coefficient 0.141;  $p = 0.035$ ) with max. temperature (correlation coefficient 0.202;  $p = 0.002$ ) with number of interventions. The association between mean air humidity was significant but negative (correlation coefficient - 0.172;  $p = 0.007$ ). The values of the influence of air pressure are not determined. As the problem of air pollution is very complex, coordinated action at many levels is needed to reduce air pollution in Slavonski Brod and consequences that can affect human health.

**Keywords :** emergency interventions, human health, hydrogen sulfide, particulate matter

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