Child respiratory health burden associated with long term NO₂ exposure in India

Abstract: Nitrogen dioxide is associated with adverse respiratory health outcomes globally. This study aims to develop a national-scale NO₂ exposure dataset using land use regression modeling and to assess the burden of acute respiratory infections (ARI) among children <5 age (CU5) attributable to NO₂ in India. We used the NFHS-4 survey, which was conducted from 2015 to 2016. Further, we analyzed cross-sectional associations between annual exposures to NO2 and ARI in CU5 using a multivariate logistic regression model. We found for every 10 μg/m³ increase in NO₂, the odds of having ARI have increased by 1.26 times (1.19-1.34). These outcomes indicate that India needs specific NO₂ emission reduction policies, just like NCAP for PM2.5.