A previous study in Bucaramanga, Colombia had shown that there was no association between outdoor air pollution and incidence of respiratory symptoms related to asthma in healthy paediatric population. We investigated whether exposure to different levels of outdoor air pollution are associated to incidence of respiratory symptoms in population with chronic diseases. Three pollution zones were selected according to historic measures of particulate matter <10 μg/m³ (PM10); low (40–60 μg/m³) and high (>60 μg/m³). A total of 756 patients with chronic cardiovascular and respiratory disease were selected around the air quality stations at each zone. This was a cohort study with the follow-up-phase lasting 6 months using daily calendar of symptoms and clinic visits. Symptoms with higher incidence rates were sneeze and hacking cough. Incidence rate of total symptoms per 100-participant-day was 46 with differences between zones. Incidence rate ratio of total symptoms between low and high zone was 1.14 (95% CI 1.11 to 1.16). Except for wheezing (IRR 0.84; 95% CI 0.78 to 0.91) and inhalers use (IRR 0.68; 95% CI 0.64 to 0.73), all symptoms were higher in middle pollution area, but multivariate analysis using Poisson multilevel approach shown after adjustment for confounding variables, high pollution area is associate with 64% and 77% more symptoms compared with middle and low pollution area, respectively. These results suggest that in populations with morbidity outdoor air pollution is a key determinant of respiratory symptoms and respiratory negative effects are seen over 60 μg/m³.