Statement of Dr. Albert A. Rizzo

Re: Tier 3 Motor Vehicle Emissions and Fuel Standards Program
Docket ID No. EPA-HQ-OAR-2011-0135

Good afternoon and thank you for the opportunity to testify today in support of Tier 3 Motor Vehicle Emissions and Fuel Standards Program. I am Dr. Albert A. Rizzo and I am Chief of the Pulmonary and Critical Care Medicine Section at Christiana Care Health Systems in Delaware and I have been caring for Delawareans with lung disease for over 30 years. As a pulmonary physician, I am here to advocate for my patients with lung disease and in my role as immediate past chair of the National Board of Directors of the American Lung Association, I am here to advocate for not only those millions of Americans who deal with lung disease but also for those millions of infants, children, teenagers and seniors who don't want to develop lung disease. It is in the best interests of the public health for our society and for this reason, the American Lung Association urges the U.S. Environmental Protection Agency to adopt final Cleaner Gasoline and Vehicle Standards before the end of this year.

The American Lung Association is the nation's oldest voluntary health agency, founded in 1904 to combat tuberculosis. Today our mission has broadened to save lives by improving lung health and preventing lung disease. We fight for healthy air because healthy air saves lives. We work hard to help people stop smoking and prevent kids from starting to prevent the development of lung disease. We help people, like my patients, to understand, manage and cope with their lung cancer, asthma or Chronic Obstructive Pulmonary Disease (COPD) – a disease better known as emphysema and chronic bronchitis. We do this by funding cutting edge medical research, educating the lay and professional public and, as I am doing today, by advocating for policy change that benefits the health of society. Our hundreds of thousands of volunteers across the country support this vital mission.

We see a compelling and urgent need for EPA to adopt cleaner gasoline and vehicle standards that will reduce ozone and particulate matter, pollutants that come from tailpipe emissions. Pollution from cars, light trucks and SUVs puts at risk the lives and health of millions of Americans.

Let me start by describing the health effects of tailpipe pollution. Motor vehicles are a major source of nitrogen oxides, carbon monoxide, and volatile organic compounds – the raw ingredients needed to form harmful ozone and particulate matter.

Ground level ozone, or smog, that blankets much of the United States during the summer is a powerful respiratory irritant. [1] When inhaled, ozone damages the lung tissue much like the summer sun burns unprotected skin. Ozone air pollution poses health risks for all who are exposed, be they infants, children, teenagers, seniors, and it is particularly troublesome to the nearly 26 million with asthma, nearly 13 million with COPD and the millions with other lung diseases. Just as importantly, even healthy adults who work or play outdoors are at risk.

EPA's just-completed assessment of ozone shows that the health effects are not limited to the respiratory system and may affect cardiovascular health, the central nervous system, as well as the reproductive and developmental systems.[2] Ozone air pollution poses health risks for all who

[1] U.S. Environmental Protection Agency. *Integrated Science Assessment of Ozone and Related Photochemical Oxidants (Final Report)*. U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-10/076F, 2013.
[2] U.S. EPA, 2013

are exposed, be they infants, children, teenagers, seniors, and especially those with asthma and other lung diseases. Even healthy adults who work or play outdoors are at risk.

The pollutants nitrogen oxides (NO_x) and sulfur are by–products of gasoline combustion and are transformed into fine particles in the air. These tiny particles are less than one-tenth the diameter of a single human hair. They are so tiny that they bypass the body's natural defenses of the nose and upper airways and lodge deep within the lung, where they harm human health. Particle pollution also diminishes lung function, causes greater use of asthma medications and increased rates of school absenteeism, emergency room visits and hospital admissions.[3]

Studies demonstrate that those who are most at risk from the effects of this fine particle pollution include infants and children, the elderly and especially those with asthma or other lung disease or heart disease.[4] The lungs of our infants and children are small and still developing. They breathe

[3] Many studies show these effects and are cited in the U. S. Environmental Protection Agency, Integrated Science Assessment for Particulate Matter, 2009. Some include these; Lin M, Chen Y, Burnett RT, Villeneuve PJ, Kerwski D. The Influence of Ambient Coarse Particulate Matter on Asthma Hospitalization in Children: case-crossover and time-series analyses. Environ Health Perspect. 2002; 110:575-581; Slaughter JC, Lumley T, Sheppard L, Koenig JQ, Shapiro, GG. Effects of Ambient Air Pollution on Symptom Severity and Medication Use in Children with Asthma. Ann Allergy Asthma Immunol. 2003; 91:346-353; Norris G, YoungPong SN, Koenig JQ, Larson TV, Sheppard L, Stout JW. An Association Between Fine Particles and Asthma Emergency Department Visits for Children in Seattle. *Environ Health Perspect*. 1999;107:489-493.

[4] Many studies show children, the elderly, and persons with respiratory and/or coronary disease as particularly vulnerable to PM. The following are a few of the more recent Pope, C. Arden III. Mortality effects of longer term exposures to fine particulate air pollution: review of recent epidemiological evidence. *Inhalation Toxicology* 2007; 19 (Suppl. 1): 33-38. Pope CA III, Dockery DW. Health Effects of Fine Particulate Air Pollution: Lines that Connect. *J Air Waste Mange Assoc* 2006; 56:709-742. Pope, CA et al. (2009). Fine Particulate Air Pollution and Life Expectancy in the United States. N Engl J Med 2009; 360:376-386. Eftim SE, Samet JM, Janes H, McDermott A, Dominici F. Fine Particulate Matter and Mortality: A Comparison of the Six Cities and American Cancer Society Cohorts with a Medicare Cohort. *Epidemiology* 2008; 19:209-216. Laden F, Schwartz J, Speizer FE, Dockery DW. Reduction in Fine Particulate Air Pollution and Mortality: Extended Follow-up of the Harvard Six Cities Study. *Am J Respir Crit Care Med* 2006; 173: 667-672 U.S. EPA. Integrated Science Assessment for Particulate Matter (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-08/139F, 2009.

more air per pound of body weight than adults and they are more likely to be active in the outdoors on high air pollution days.[5]

Both particulate matter and ozone cause the most egregious harm – premature death. Unfortunately, death is not the only harm these pollutants cause. For hundreds of thousands of people, polluted air means more breathing problems, aggravated asthma, fear-filled trips to the emergency room, and even admissions to the hospital and sometimes to the intensive care unit. These are the patients I, and physicians like me, see daily in the hospital and in our practices.

My patients already have reduced lung function from COPD, asthma, pulmonary fibrosis and other chronic lung diseases. Their reserve to handle any additional impairment is limited. Exposure to ozone and particulate matter is exactly the additional impairment that can affect my patients' ability to function independently on a day-to-day basis. Increased use of rescue inhalers and steps up in medical management due to poor air quality is burdensome to the patients and their caregivers. COPD is already the second leading cause of disability and impairment in this country and the personal and societal impact of this is amplified by air pollution. We educate our patients to stay indoors or limit their activities, when possible, on "bad air" days. Despite this, we often see a rise in office and ER visits during these days. The impact on the quality of their lives, lost productivity from work absenteeism and missed school days take a toll on all of us.

[5] American Academy of Pediatrics Committee on Environmental Health, Ambient Air Pollution: health hazards to children. *Pediatrics* 2004; 114: 1699-1707.

The proposed cleaner gasoline and vehicle standards will reduce ozone and particulate matter pollution and will prevent thousands of early deaths, tens of thousands of asthma attacks, hospital admissions and ER visits. “ A Penny for Prevention: The Case for Cleaner Gasoline,” a report by the American Lung Association, found that these standards will prevent more than 2,500 early deaths each year, and more than 15,000 asthma attacks each year by 2030. These estimates are for the eastern half of the U.S. alone. Once fully implemented the health benefits of Tier 3 Motor Vehicle Emissions and Fuels Standards Program will be much greater.

Thank you for the opportunity to speak in support of these lifesaving standards. As a pulmonologist who has seen the health effects of air pollution, I urge you to adopt final cleaner gasoline and vehicle standards this year.