THE APHEKOM PROJECT – A LITERATURE REVIEW OF AIR POLLUTION INTERVENTIONS AND THEIR IMPACT ON PUBLIC HEALTH

Susann Henschel, *Focas Institute, Dublin Institute of Technology, Camden Row, Dublin 8, Ireland*
Patrick Goodman, *Dublin Institute of Technology, Dublin, Ireland*
Richard Atkinson, *St. George's, University of London, London, United Kingdom*
Ariana Zeka, *Brunel University, London, United Kingdom*
Antonis Analitis, *Department of Hygiene, Epidemiology and Medical Statistics, Medical School, University of Athens, Athens, Greece*
Klea Katsouyanni, *Department of Hygiene, Epidemiology and Medical Statistics, Medical School, University of Athens, Athens, Greece*
Alain Le Tertre, *French Institute for Public Health Surveillance, InVS, Paris, France*
Mathilde Pascal, *French Institute for Public Health Surveillance, InVS, Paris, France*
Olivier Chanel, *French Institute for Public Health Surveillance, InVS, Paris, France*
Sylvia Medina*, *French Institute for Public Health Surveillance, InVS, Paris, France*
Bertil Forsberg*, *Umeå University, Umeå, Sweden*
**On behalf of the Aphekom network www.aphekom.org*

Background and Aims: Intervention studies play an important role in supporting and complementing scientific validation of results of epidemiological non-intervention studies linking air pollution and health. In this paper a collection of existing published intervention studies is reviewed with the aim to give a summarized overview spanning a variety of approaches regarding the type of the intervention and findings with the main focus on studies that assessed interventions that improved air quality and the associated positive impact on public health. Air pollution interventions were defined as events aimed at reducing air pollution and also events where air pollution reductions occurred as a side effect.
Methods: Intervention studies published in English from the 1960's up to January 2011 were considered for inclusion in this review. Studies have been selected for inclusion in the review based on the aim to span the diversity of interventions and their assessment of different health outcomes. Where interventions were examined by numerous studies with a variety of publications, only the main, most representative and/or most recent studies were included. The selection was based on a systematic search of Pubmed, Google Scholar, ISI Web of Knowledge^{SM} and Science Direct.
Results: In total, 22 intervention studies have been included in this review. This review shows that air pollution interventions have been successful at reducing air pollution levels. It was shown that there is consistent significant published evidence that most of these interventions have been associated with health benefits, mostly by way of reduced cardiovascular or respiratory mortality and or morbidity. Throughout the majority of reviewed interventions the found decrease in mortality exceeded by far the expected predicted figures based on observations of European multicity studies.
Conclusion: There is consistent and significant evidence that decreased air pollution levels following an intervention resulted in a health benefit for the assessed population.