



The continuing challenge of air pollution

Once a severe but local problem of highly industrialised and densely populated cities, air pollution has now morphed into a more insidious threat to the public health of entire nations. Smoke from domestic coal fires, power plants and heavy industries has largely vanished from our skies. This has been achieved through the use of clean fuels, filtration of flue gases and improvements in process technology, along with the export of the most polluting industries to countries with lower wages and less pollution control. At the same time, motor vehicle transport has increased enormously, and other sources of air pollution, such as intensive livestock farming, have emerged. Pollution is transported over long distances, and secondary pollutants, such as ozone, are formed through photochemical reactions. The erstwhile distinctions between 'dirty' cities and the 'clean' countryside have

become blurred as a result, and nowadays a much larger fraction of the population is exposed to some form or level of hazardous air pollution than 50 years ago. Because air pollution, in some ways, is now less visible and less immediately irritating than it used to be, understanding and communicating the health risks of air pollution has become more of a challenge than in the past.

Members of the European Respiratory Society (ERS) Environment and Health Committee have now produced a booklet on air pollution and health that is an elegant attempt to explain, to a wide audience, what air pollution is at the current time, and what damage it still does to our health. The authors have achieved a welcome mix of scientific authority and clarity that will appeal to clinicians, public health practitioners, patient organisations, stakeholder representatives and informed members of the lay public.

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One reason why it is so important to have an accessible booklet on air pollution and health is that pollution levels in many areas in Europe are still far above what the World Health Organization (WHO) considers acceptable in its latest revision of air quality guidelines [1]. It was difficult for the scientific community to get involved sufficiently when decisions about new air pollution limit values were made in Europe in 2008. As a result, Europe now accepts air pollution concentrations that are much higher than the WHO air quality guidelines, and also considerably higher than the air quality standards of the US Environmental Protection Agency [2, 3].

One can speculate about why we have less stringent guidelines on air pollution in Europe than we should have. Well-organised business interest groups put pressure on policy makers to carefully consider economic interests in all areas of decision making; it has been argued that the interests of the environment and of

public health are less well taken care of in the process [4].

We could also learn from experiences in areas such as the fight for smokefree indoor spaces. There is a very long history of attempts to make indoor spaces free from tobacco smoke, and the role of the tobacco industry in obstructing such attempts is well documented [5]. The lessons learned in that area of public health science and policy need to be taken to heart by the outdoor air pollution community, in particular with regard to the following: 1) keep studying the issue even after abatement measures have been taken; documentation of benefits is important, and it helps to keep the issue on the agenda just in case laws or measures are being challenged; 2) support studies at a local level that may not be scientifically 'new' but will help inform local or national policy makers in their decisions; 3) interact with other disciplines to get the questions framed in the correct manner; 4) be prepared to deal with strong interest-driven opposition, and to work with advocacy organisations in the forefront of the policy debate; and 5) train young scientists in the field to work with policy makers and advocacy groups.

In the meantime, evidence is strengthening that reductions of air pollution actually make a public health difference. Public health benefits from smaller-scale interventions, such as a ban on coal sales in Dublin, Ireland [6], and lowering the sulphur content of fuels in Hong Kong [7], have been documented. Recently, it was shown that differential reductions in particulate matter pollution across the USA were associated with differential increases in life expectancy [8]. Such studies offer encouragement to those continuing the quest for cleaner air. Booklets such as the one now produced by the ERS Environment and Health Committee offer welcome ammunition for those engaged in the struggle for healthier air. The ERS would do well to cherish the voluntary free contributions of the experts involved.

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