

Human Health and Economic Costs of Air Pollution in Utah: An Expert Assessment

Air pollution causes more damage to health and economy than previously understood, contributing to approximately one in six deaths globally. However, pollution reduction policies remain controversial even when proven effective and cost negative, partially because of misunderstanding and growing mistrust in science. We used an expert assessment to bridge these research–policy divides in the State of Utah, USA, combining quantitative estimates from 23 local researchers and specialists on the human health and economic costs of air pollution. Experts estimated that air pollution in Utah causes 2480 to 8000 premature deaths annually (90% confidence interval) and decreases the median life expectancy by 1.1 to 3.6 years. Economic costs of air pollution in Utah totaled \$0.75 to \$3.3 billion annually, up to 1.7% of the state’s gross domestic product. Though these results were generally in line with available estimates from downscaled national studies, they were met with surprise in the state legislature, where there had been an almost complete absence of quantitative health and economic cost estimates. We discuss the legislative and personal responses of Utah policy makers to these results and present a framework for increasing the assimilation of data into decision making via regional expert assessment. In conclusion, combining quantitative assessments from local experts is a responsive and cost-effective tool to increase trust and information uptake during time-sensitive policy windows.