Mainstreaming Health Effects Evaluation into Air Quality Management Planning in Latin America: the Case of the Aburrá Valley

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Background. More than 150 million people live in Latin American cities where WHO Air Quality Guidelines are exceeded. Though health protection should be at the center of policy and decision-making, health evaluation are far from being fully incorporated into air quality management and other related policies at all levels. Mainstreaming health effect considerations into air quality management processes is indispensable for catalyzing abatement efforts towards the achievement of Sustainable Development Objectives. The Clean Air Institute (CAI) works with interested parties to incorporate integrated approaches, methodologies and tools for preparing and implementing comprehensive air quality management instruments. By applying the Integrated Environmental Strategies approach, CAI has been assisting the identification, evaluation and prioritization of interventions to effectively abate air pollution at local and national scales. In this work, CAI describes how it has been mainstreaming health impact assessment, using as an example the case of the Integrated Air Quality Management Plan for the Valle of Aburrá 2017-2030 (PIGECA), officially launched late 2017. Our purpose was dual: first, to evaluate the health benefits of the adoption of plan; and second, to provide basis for the further institutionalization of health benefit considerations in the overall air quality management process.

Methods. The health impact assessment presented here is an essential part of the Integrated Environmental Strategies approach used to prepare the Aburrá Valley's PIGECA. Based on local air quality monitoring data and health incident rates, we applied health impact functions to quantify the number of avoidable deaths due to the reduction on $PM_{2.5}$ concentrations and cumulative benefits for the period 2017– 2030. Information was processed using BenMAP-CE v1.1. Colombia's value of a statistical life was used to perform the economic valuation. The analytical process was enriched by a multi-stakeholder policy dialogue, which helped to advance a common understanding about the importance of air pollution from a health perspective.

Results. The implementation of PIGECA is expected to lead a reduction of 18,344 cases of mortality during 2017-2030. The successful implementation of the plan could reduce attributed health burden on 74% for 2030. Cumulative economic benefits could reach 3.9 USD Billion (which represents around 2% of the regional GDP). Moreover, PIGECA explicitly includes key measures to reinforce health as the core of air quality management in the region for achieving air quality goals.

Conclusions. Health considerations can be mainstreamed as core of the air quality management process in Latin America. Health assessment is crucial to raise awareness and build consensus to address air quality issues at a magnitude consistent to its challenges. Dissemination and replication of this experience provides a great value to assist other cities for developing comprehensive air quality management plans, including sound health assessments and engaging multiple stakeholders. BenMAP-CE provides an excellent platform to support analysis and, furthermore, to bridge gaps for increasing collaboration between health, environment and other authorities and actors.