

Recommendations and Solutions from *The Lancet* Commission on Pollution and Health

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The aim of *The Lancet* Commission on Pollution & Health is to raise the global awareness, resources and political will needed to address pollution.

To advance this aim, the Commission Report makes six recommendations. Additional recommendations are presented at the conclusion of each section in the report.

1. Elevate pollution as a national and international priority, and integrate it into country and city planning processes.

Pollution can no longer be viewed solely as an environmental issue. It now affects the health and well-being of entire societies. Government leaders at all levels should prioritize pollution control within their agendas; integrate pollution control into development planning; and link pollution prevention to commitments on the SDGs, climate change, and non-communicable disease control.

2. Increase funding for pollution control and prioritize by health impacts

The level of funding for pollution control in low- and middle-income countries is meager and should be substantially increased, both within national budgets and among international development agencies.

International support for pollution control is most effective when it leverages additional actions and funding by others. Examples include support for pollution prioritization and planning processes within rapidly industrializing cities and countries; regulatory and enforcement assistance; building technical capacity; and supporting direct interventions to save lives. Financing programs should be monitored to assess cost-effectiveness and to enhance accountability.

3. Establish systems to monitor pollution and its health effects.

Data collected at the local and national levels are essential for measuring pollution levels, identifying and apportioning pollution sources, evaluating interventions, guiding enforcement, informing civil society and the public, and assessing progress toward goals. The incorporation of new technologies such as satellite imaging and data mining into pollution monitoring can increase efficiency, expand geographic range, and lower costs.

4. Build multi-sectoral partnerships for pollution control.

Inter-agency partnerships and public-private collaborations can proved to be effective tools in the development of clean energy sources and clean technologies that ultimately will prevent pollution at the source. Cross-ministerial collaborations that involve Health and Environment Ministries, but also Ministries of Finance, Energy, Agriculture, Development, and Transport are essential.

5. Integrate pollution mitigation into planning processes for non-communicable diseases.

Interventions against pollution need to be a core component of the Global Action Plan for the Prevention and Control of Non-Communicable Diseases.

6. Conduct research into pollution's impacts and pollution control.

Research is needed to understand and control pollution and to support change in pollution policy. Pollution-related research (research of the “pollutome”) should:

- Explore emerging causal links between pollutants, diseases, and subclinical impairment, for example between ambient air pollution and dysfunction of the central nervous system in children and in the elderly;
- Quantify the burden of disease associated with known toxic chemicals such as lead, mercury, chromium, arsenic, asbestos, and benzene.

- Characterize the health impacts from newer chemical pollutants such as developmental neurotoxicants, endocrine disruptors, novel insecticides, chemical herbicides, and pharmaceutical wastes;
- Identify and map pollution exposures in low- and middle-income countries;
- Improve estimates of the economic costs of pollution and pollution; *and*
- Improve estimates of the cost of inaction and returns from interventions

Solutions are Feasible: A 12 Step Roadmap to Pollution Control

The report includes short, medium and long-term solutions. Below are highlights of twelve key strategies for countries and cities to reduce pollution and save lives.

Plan First. Examine where the largest impacts from pollution occur, and prioritize projects to implement. Resources are always scarce, and work should be undertaken to determine the most impactful and potentially successful projects.

- *Base prioritization on health impact, economic benefit, and other key metrics.*
- *Use Health and Pollution Action Plan (www.gahp.net/planning-health-pollution-action-plans/) tools or equivalent.*
- *Source apportionment studies are often needed to determine the sources of toxicants.*

Outdoor Air Pollution

1. Switch to lower sulfur contents fuels - autos, trucks, and heating.
Use euro 6 fuel standards.
2. Control large stationary polluters (power plants, manufacturing facilities, smelters, for example) and smaller stationary sources (incinerators, local heating, etc)
Switch fuels, install scrubbers, change zoning, solid policy, community education, and enforcement
3. Establish effective controls on car and truck emissions
Deal with smoke belchers. This needs solid policy and enforcement.
4. Change practices with regard to burning of biomass and solid waste.
Bring new techniques to deal with farm and household waste, and enforce rules

Household Air Pollution

5. Bring in cleaner fuels, (not kerosene) and phase out wood and coal.
Support bottled gas, biogas, solar, electrification, etc.
6. Support better cookstoves
Ones that reduce particulate emissions.

Water Pollution - Sanitation

7. Fund wastewater treatment plants and house connections in cities
8. Install village and home local sanitation and clean water.
Include safe water storage, and water treatment

Soil Heavy Metals And Chemicals

9. Make an inventory of highly polluted sites.
Look for major health exposures
10. Clean up most toxic sites.
Prevention always first! Polluter pays, if possible.
11. Don't forget lead (Pb) exposures
Explore lead in pottery, cooking utensils, battery recycling, paint, other

Workplace

12. Regulate occupational exposures.
Fund effective enforcement.

Additional Tips for Pollution Programs

Monitoring is critical – to develop baselines, determine program effectiveness, and provide public information.

Enforcement of regulations is critical and needs funding. No regulations should be created without an effective enforcement program design and implementation.

Research activities will be required to support these solutions.

Public and political support, and enthusiasm is needed. Programs should have a communications component.