

Frequently Asked Questions

Ambient (outdoor) Air Pollution Database Update 2014

1. What is the aim of the ambient air pollution database ?

The database on ambient (outdoor) air pollution - the largest of its kind – covers 1600 cities and 91 countries, and indicates where air pollution levels and the related health risks are higher. The aim of this updated database is not to rank cities or countries but to reflect the monitoring efforts undertaken in those countries. WHO has brought together this information on ambient air pollution collected by cities worldwide in order to raise awareness and facilitate adequate responses to protect public health from the adverse impacts of outdoor air pollution.

Many cities in the world, including some expected to be among the most polluted, do not collect information or report on its ambient air quality.

2. What information does the urban outdoor air pollution database include? How was this information collected and organized in this database?

Included in the ambient air pollution database are annual mean concentrations of particulate matter (PM₁₀ or PM_{2.5}) based on daily measurements or data which could be aggregated into annual means. In a few exceptional cases, where annual means could not be calculated, measurements covering a more limited part of the year were used. In order to present air quality that is largely representative for human exposure, only measurements characterized as urban background, residential areas, commercial and mixed areas were used. Stations characterized as particular "hot spots" or exclusively industrial areas were not included, unless they were contained in reported city means and could not be dissociated.

Particulate matter is not the only air pollutant, however it is an important indicator of long-term air quality and of health risks.

The primary source of data in the ambient air pollution database comes from official national and sub-national reports or institutes or websites reporting measurements of PM₁₀ or PM_{2.5}. Additional sources of air pollution measurements are other UN agencies, other development agencies, peer-reviewed journal articles and the regional networks: Clean Air Initiative for Asia and Airbase for Europe are also included.

2. What are the most polluted cities in the world? Does WHO rank or compare cities on urban outdoor air quality?

Many cities in the world, including some expected to be among the most polluted, do not collect information or report on its outdoor air quality. WHO therefore cannot compare cities based on their levels of outdoor air pollution.

Rather, WHO has brought together information on ambient air pollution collected by cities worldwide in order to raise awareness and facilitate adequate responses to protect public health from the adverse impacts of outdoor air pollution.

Cities that collect and disseminate information on outdoor air quality need to be praised for their action. This is the first crucial step to identify if there is an outdoor air pollution problem and to begin to take corrective action. The cities which have invested in the capacity to regularly monitor and report the local air quality measurements have already demonstrated a commitment to starting to address air quality issues and public health.

3. What are the key findings about the database?

The great majority of cities worldwide exceed WHO's Air Quality Guideline levels. The WHO Air Quality guideline recommended PM₁₀ maximum annual mean levels of 20 µg/m³. Globally, only relatively few of the monitored cities currently meet the WHO guideline values. These tend to be clustered in high-income countries. Based on the monitored cities, air quality is poorest in the Eastern Mediterranean and South-East Asian regions, followed by the Latin American and African countries.

Based on extrapolations of these data, about half of the urban population live in cities that exceed by 2.5 times or more the recommended levels of fine particulate matter set out by the WHO Air Quality Guidelines and only around 12% of the total urban population live in cities where the air quality complies with such levels.

4. What has changed since the last database?

Information on air quality levels in 1600 cities from 91 countries have been compiled in this updated database. This is significantly more than in 2011, when the database covered 1100 cities. This may indicate that more cities are concerned with their air quality, and are either aiming to take action to improve their air quality, or working to maintain the clean levels already achieved.

As seen in the previous version of the database, data on air quality in the Sub-Saharan Africa and the Eastern Mediterranean regions remains scarce.

Based on the comparison of cities with data available in both the 2011 and the 2014 versions of the database, the quality of the air is worsening globally in recent years. In several countries, mostly in high-income, however, the air quality appears to have improved.

Some cities do not necessarily follow the regional trend in terms of air quality showing it is possible to take actions locally to improve the situation.

5. What are some of the major sources or causes of urban ambient air pollution?

Both 'mobile' sources (i.e. cars) and 'stationary' sources (i.e. smoke stacks) make significant contributions to urban ambient (outdoor) air pollution. Some of the major sources include exhaust fumes from vehicles, emissions from manufacturing facilities (e.g. factories) and power generation (e.g. smoke stacks of coal fired power plants). Also in those cities where residential use of coal and wood for cooking and heating is permitted, the emissions from households using these fuels can make an important contribution to the levels of ambient air pollution.

6. WHO alert regularly on the number of deaths caused by air pollution, how are these numbers calculated?

The number of deaths caused by air pollution are estimated on the basis of the air quality levels people are exposed to, and the increased risks of cardiovascular and respiratory diseases that are incurred at those levels. The air quality levels are estimated on a combination of satellite information, chemical transport models and ground measurements of air quality, and the increased risks come from epidemiological studies. The methods are explained in detail on our web site (http://www.who.int/phe/health_topics/outdoorair/en/)

To find out more about health impacts of ambient air pollution, WHO Air Quality Guidelines, ambient air pollution fact sheet and other resources please [click here](#)