

Editorial

News on air pollution and health data and impacts on health from the World Health Organization

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In the recent months, the World Health Organization (WHO) launched important news related to air pollution and health. The first is the new global data on exposure and burden of disease from air pollution – both household and ambient. The second is the new version of WHO AirQ+ software that estimates the impacts of air pollution on health. The third is related to the BreatheLife communication campaign that was launched last year together with the United Nations Environment Programme and the Climate and Clean Air Coalition, and whose audience include the general public, city authorities, and health professionals.

Air pollution levels are at seriously high in several areas of the world. Major sources of air pollution from particulate matter include the inefficient use of energy by households, industry, the agriculture and transport sectors, and coal-fired power plants. In some regions, sand and desert dust is also a large source of PM_{2.5} and waste burning and deforestation are additional sources of air pollution in some areas. Around 3 billion people – more than 40% of the world's population – still do not have access to clean cooking fuels and technologies in their homes, the main source of household air pollution, and Sub-Saharan Africa is lagging behind. WHO released new data in May 2018, that shows that 9 out of 10 people breathe air containing unsafe levels of pollutants and 7 million deaths every year are attributable to ambient (4.2 million deaths) and household air pollution (3.8 million) from particulate matter with a diameter of 2.5 micrometer or less (PM_{2.5}). Fine particles penetrate deep into the lungs and cardiovascular system, causing diseases including stroke, heart disease, lung cancer, chronic obstructive pulmonary diseases and respiratory infections, including pneumonia. More than 90% of air pollution-related deaths occur in low- and middle-income countries, mainly in Asia and Africa.

As custodial agency for the three air pollution related Sustainable Development Goals (SDG) indicators - access to clean energy, air quality in cities and mortality from air pollution -, WHO is hosting several databases related to exposure to air pollution. More than 4300 cities in 108 countries are now included in WHO's ambient air quality database, making this the world's most comprehensive database on ambient air pollution. WHO Data Integration Task Force developed the Data Integration Model for Air Quality (DIMAQ) to combine data from multiple sources in order to provide estimates of population exposures to PM_{2.5} at high spatial resolution (0.1° × 0.1°) globally. WHO also maintains a database storing information on the technologies and fuels used for major household energy end uses (e.g. cooking, heating, lighting) from over 1100 nationally-representative surveys and

censuses. The calculation of the burden of air pollution on health is related to modelled data from monitoring stations and satellite estimates for ambient and modelled data from the percentage of population using polluting fuels and technologies for cooking. Estimating attributable deaths and diseases from air pollution are the essential starting point for developing or adjusting policies and interventions that safeguard people's health.

To support the quantification of the health effects of exposure to air pollution WHO has updated the software tool AirQ+ that was originally launched in May 2016 to replace the AirQ software already online for 12 years. The new tool calculates the health effects of exposure to air pollution from various pollutants, including estimates of reduction in life expectancy. In the 2 years since its launch, thousands of users from all over the world have used the software, which has been very recently translated in Russian and a French translation is ongoing.

In conjunction with the burden of disease data publication, global communications campaign BreatheLife has launched a challenge to encourage citizens to take action to reduce air pollution. The first in the series is "Marathon a month" which calls on people to pledge to leave their car behind and use alternative forms of transport for at least the distance of a marathon (42km/26 miles) during one month. These three news just cover the last month of activities of WHO on air pollution. The all range of work by WHO on air pollution, coordinated in a Global Platform on Air Quality and Health, covers many other aspects relevant for public health.

WHO is working to strengthen the health sector capacity to inform and protect against the adverse effects of air pollution and also provide tools to assess the health impacts of sectoral policies to engage with other sectors. In order to bring together global, national and local partners to share knowledge and take action for cleaner air and better health globally, WHO is organizing the first Global Conference on Air Pollution and Health, in collaboration with other UN agencies and international institutions (UNEP, WMO, CCAC, UNFCCC and UNECE) (<http://www.who.int/airpollution/events/conference/en/>). The conference is a chance to update the evidence on the health impacts of air pollution, the methods of monitoring pollution and health exposures, and tools for evaluating and implementing effective interventions. Air pollution is hitting the headlines in many different places and remains high on WHO agenda, and hopefully we will see improvements soon in areas of the planet that suffer for the consequences of bad air quality.