Background

The Universal Declaration on Human Rights proclaims that everyone has the right to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment. All of the 3.5 billion workers in the world have the right to breathe clean air at their workplaces, as well as at their homes, cities and villages.

Pollution of air at the workplace, being indoors in the work premises, or during work outdoors is harmful to health and can be prevented. For this reason the 13th WHO General Programme of Work (2019–2023) states that “with respect to air pollution (i.e. outdoor, household and workplace air pollution) and climate change mitigation, WHO will scale up its work with different sectors – including transport, energy, housing, waste, labour and urban planning – at the national and local level to monitor air quality, develop strategies for transitioning to healthier technologies and fuels and for ensuring that all populations breathe air that meets the standards of WHO’s air quality guidelines, and that scientific evidence will be translated into effective policies.”

WHO has estimated outdoor air pollution causes 4.2 million premature deaths worldwide every year among the general population, including workers. In 2016, 91% of the world population were living in places where the WHO standards for air quality were not met. The main pollutants of outdoor air
include: (1) particulate matter – fine particulate matter (PM2.5) and coarse particulate matter (PM10); (2) ozone (O3); nitrogen dioxide (NO2); and (3) sulfur dioxide (SO2).

Outdoor air pollution can cause asthma, chronic obstructive pulmonary diseases and impaired lung function, lung cancer, heart attacks and stroke. Children and adults with pre-existing asthmatic and respiratory condition and those with high risk of cardio- and cerebrovascular diseases are particularly at risk. Air pollution is recognized as human carcinogen (group A) by the International Agency for Research on Cancer.

Outdoor workers are particularly vulnerable to ambient air pollution. Worldwide at least 1.2 billion workers work outdoors most of their work time. These include agricultural workers, street vendors and delivery workers, urban transport, traffic police, and road repair, construction, waste collection etc. In addition to breathing polluted air, such workers are often exposed to other environmental risks, such as heat and cold, heavy rain, wind and other climatic conditions as well solar UV and allergenic pollens. In addition, outdoor workers are exposed to a range of occupational hazards arising from their specific work activities – fumes, particles and fibres, toxic chemicals, noise, vibrations, manual handling of loads, awkward work posture, psychological harassment and accidents. The evidence on the health impacts of occupational exposure to outdoor air pollution is scarce – few recent studies have found impairment in the lung function of exposed workers.

Occupational exposure to outdoor air pollution is a particular concern, because the exposed population is large and because the conventional measures for engineering controls of workplace hazards, such as hazard elimination, encapsulation and ventilation are not applicable to the outdoor environment. Also, employers and workers themselves may have little or no control over the sources of outdoor air pollution. However, all workers, including those working outdoors, should enjoy the right to favourable working conditions and to the highest attainable standard of physical and mental health. Decent work means also being able to breathe clean air at work.

Air pollution in indoor workplaces is also a major concern and has been traditionally addressed by the occupational health and safety regulations and programmes. Sources of air pollution in indoor workplaces include technological processes, burning of materials and waste, cleaning, transport vehicles and engines with internal combustion, heating etc. Air pollutants at the workplace include a very wide range of chemical substances and preparations, gases, fumes and aerosols, particles, fibres etc. The levels of exposure to air pollutants at the workplace can be much higher that outdoors. The health effects can be systemic toxic effects and acute poisonings, allergies, such as asthma, chronic respiratory diseases, and cancer. WHO estimates that health effects of occupational exposure to selected air pollutants at the workplace can cause more than 860 000 deaths a year. The real magnitude of the health impacts on workplace air pollution is likely to be much higher, but it is difficult to quantify the global burden of disease given the wide diversity of air pollutants and occupational exposures in the different workplaces, sectors and activities.

Protection of workers’ health from air pollution

The WHO Air Quality Guidelines provide thresholds for health-harmful levels of air pollution for the general population. The international labour conventions on occupational safety and health apply to all workers and in all workplaces, including outdoor workplaces. Under the Occupational Safety and Health Convention, 1981 (No. 155) employers shall be required to: (1) ensure that, so far as is reasonably
practicable, the workplaces, machinery, equipment and processes under their control are safe and without risk to health; (2) ensure that, so far as is reasonably practicable, the chemical, physical and biological substances and agents under their control are without risk to health when the appropriate measures of protection are taken; (3) provide, where necessary, adequate protective clothing and protective equipment to prevent, so far as is reasonably practicable, risk of accidents or of adverse effects on health. Other international labour standards relevant to ambient air pollution and its health effects are the Convention concerning the Protection of Workers against Occupational Hazards in the Working Environment Due to Air Pollution, Noise and Vibration (C148 from 1977) and the Convention concerning Prevention and Control of Occupational Hazards caused by Carcinogenic Substances and Agents (C139 from 1976).

Though, employers may have less influence on the quality of the outdoor environment than on the indoor environment, it is important to recognize that exposure to air pollution when working outdoors is also an occupational hazard for workers and it is necessary to apply protective measures “as far as reasonable practical”.

Examples of workplace measures to protect workers from ambient air pollution include:

- **Reduction of exposure** – reducing the working time outdoors, rotation of workers, restricting work during episodes of severe air pollution, including dust storms.
- **Providing respiratory protection programmes** – appropriate respirators, fit testing, training of workers.
- **Medical surveillance of workers** - medical check-ups for underlying health conditions that can worsen with exposure to air pollution – for example asthma, COPD, cardiovascular diseases (risk of heart attack and stroke).
- **Health surveillance of working environment** – recording levels of air pollution from the municipal sources.
- **Reporting of cases of occupational diseases that can be caused by ambient air pollution among exposed workers (asthma, chronic obstructive pulmonary disease, lung cancer) and follow up with the employment injury scheme.**

In addition, undertakings could contribute to reducing air pollution by:

- **Reducing use of solid fuels in work processes and moving to cleaner energy sources.**
- **Applying technologies reducing black carbon emissions** (e.g. from traditional brick kilns and coke ovens).
- **Waste reduction, separation, processing, management and recycling and reuse instead of open incineration of solid waste.**
- **Reduced open burning of agricultural residues and applying alternative techniques for crop management.**
- **Replacing or supplementing diesel generators with devices using renewable energy.**
- **Promoting walking and cycling for commuting of workers to the workplace.**

Measures at the national level to address occupational exposure to air pollution could be:

- **Warnings for reducing or stopping work outdoors in periods of severe air pollution.**
• Raising awareness of employers and workers about ambient air pollution and their responsibility for occupational health and safety.
• Recognition of exposure to ambient air pollution while working outdoors as an occupational safety and health issue and using the existing occupational safety and health regulations and standards to provide protection of workers.
• Providing toolkits and programmes for engaging businesses and workplaces in prevention and control of air pollution, for example by avoiding open air incineration and controlling other sources of air pollution at the workplace.
• Engaging with private sector, businesses and workplace undertakings for preventing emissions of air pollution and improving their overall environmental performance.
• Stimulating initiatives combining occupational safety and health, environmental protection and green workplaces and technological transfer and innovations to prevent ambient and workplace air pollution.

The prevention of occupational exposure to workplace air pollution follows a well-established hierarchy of interventions where priority is given to elimination or substitution of the occupational hazard, as the most effective intervention, followed by other engineering controls to reduce exposure, such as encapsulation, local and general ventilation and wet processes. The least effective measures for control of air pollution are administrative controls, such as organization of work and rotation of workers to reduce exposure duration, training of workers, as well as the use of personal protective equipment for respiratory protection, as ultimate temporary measure.

Air quality standards have been established for a big number of workplace air pollutants by several organizations, such as the Threshold Limit Values of the American Conference of Governmental Industrial Hygienists’ (ACGIH) and Indicative Occupational Exposure Limits of the European Commission. The international chemical safety data cards developed by WHO and ILO contain references to the available standards for occupational exposure to more than 1700 substances. However, at the workplace the principle is to avoid exposure, if not possible to keep exposure levels as low as possible.

Workers, exposed to air pollution at their workplace should have medical surveillance, including preplacements, periodic and final medical examinations and tests to identify any pre-existing health conditions that can worsen as a result of exposure to air pollution, as well as to determine as early as possible any health effects of the occupational exposure and to take measures for prevention of diseases and disability.

The International Labour Convention concerning the Protection of Workers against Occupational Hazards in the Working Environment Due to Air Pollution, Noise and Vibration (C148 from 1977) requires parties (46 countries have ratified) to develop national laws or regulations and technical standards for the prevention and control of, and protection against, occupational hazards in the working environment due to air pollution, noise and vibration. There are also specific international labour conventions on prevention and control of occupational hazards caused by carcinogenic substances and agents (C139 from 1976) and on the use of asbestos.

**WHO's First Global Conference on Air Pollution and Health, 30 October – 1 November 2018**

The first WHO Global Conference on Air Pollution and Health: Improving air quality, combatting climate change – saving lives, will take place at WHO Headquarters in Geneva from 30 October to 1 November.
this year. The conference is organized by WHO in collaboration with the UN Environment, the World Meteorological Organization (WMO), the Climate and Clean Air Coalition (CCAC), the Secretariat of the UN Framework Convention on Climate Change (UNFCCC), the United Nations Economic Commission for Europe (UNECE) and the World Bank.

The conference will host about 400 participants, including representatives of WHO Member States, intergovernmental organizations, civil society, academia and the media. It aims to share with participants the current evidence on air pollution exposure and its health impacts; tools for informed decisions on healthy policy choices; and knowledge on effective interventions that may improve air quality and promote health. Several outcomes are anticipated, including a “Call for Urgent Action” by health and other sectors to reduce the number of deaths due to air pollution. The conference will call for commitments to improve air quality from countries, cities, relevant intergovernmental organizations and non-state actors.

**Workshop programme / provisional agenda**

The round table will be held on 29 October 2018 in WHO headquarters, prior to the Global Conference on Air Pollution and Health. It will provide opportunities for conference participants who have a stake in protection of workers’ health to have focused discussion to identify the major challenges for protecting workers from air pollution and build momentum for commitments for action at workplace, national and international levels to increase the protection of workers to air pollution. The deliberations of the roundtable will inform the discussions at the WHO’s First Global Conference on Air Pollution and Health.

The discussion would focus on the following possible questions:

1. Which groups of workers are at highest risk of occupational exposure to outdoor air pollution?
2. What are the health effects of occupational exposure to air pollution, how these effects are different for outdoor workers?
3. How can we assess the health impact of outdoor air pollution on workers?
4. What are the examples of actions by undertakings, employers and workers’ organizations, local authorities, public health and labour inspectors and government agencies to protect workers’ health and safety from outdoor and workplace air pollution?
5. How the international labour standards and national regulations on occupational safety and health apply to occupational exposure to outdoor and workplace air pollution.
6. What is needed to stimulate employers and workers to reduce air pollution at the workplaces, e.g. industrial sources of air pollution, construction, transport, waste and crop burning, occupational safety and health measures?
7. How to increase global awareness about workplace air pollution and its relation to outdoor air pollution?
Agenda

Morning session: Outdoor air pollution

- Occupational exposure to outdoor air pollution – what do we know, links with other risks, e.g. heat
- Perspectives from countries on protection of outdoor workers
- Perspectives from workers’ and employers’ organizations on protection of outdoor workers
- International labour standards for occupational safety and health related to air pollution
- Respiratory protection programmes for outdoor workers

Afternoon session: Workplace air pollution

- Air quality at the workplace – major health impacts
- Preventive strategies for workplace air pollution
- International labour standards related to workplace air pollution
- International chemical safety data cards for workplace air pollutants
- Lessons learned from prevention and control of workplace air pollution

Expected number of participants

Participants will include experts from governments, organizations of workers and employers, scientists, civil society representatives, local authorities, intergovernmental and international organizations

25–35

List of invitations with email addresses (if the workshop is open, please specify it below here)

The meeting is open to all conference participants, subject to the seating capacity of the meeting room