Key messages

» Over 80% of the world’s urban population lives with unsafe levels of air pollution.

» Cleaning up urban air is essential to achieve multiple sustainable development goals (SDGs), to reduce the global burden of disease from noncommunicable diseases, and to meet climate change mitigation goals.

» Urban leaders can tackle air pollution and climate change through health-focused sustainable urban policies while making cities healthy and climate-resilient places to live.

» A growing number of cities are committing to meet WHO air quality guidelines for better health and sustainable urban development.
Introduction

The world’s cities are growing fast. Unfortunately, urban dwellers’ exposure to dangerous air pollution is growing along with them.

Today, 4.2 billion people – more than half of the world’s population – live in cities.

More than 80% of them live with levels of fine particulate matter pollution that exceed WHO air quality guidelines. By 2050, over 70% of humanity will live in urban areas. As most future urban growth will take place in developing cities, the world today has a unique opportunity to guide urbanization, the clean energy transition, and other major urban development trends in a way that protects and promotes health.

Strong policies to clean up urban air must match that growth. Improving urban air quality is essential for reducing the currently heavy burden of cardiovascular, respiratory, cancer, pneumonia and other diseases among urban residents. Persistent and, in some places, growing health inequality makes these impacts fall hardest on the most vulnerable in society, including children, the elderly and the poor.

Cities are responsible for 70% of global greenhouse gas emissions (GHGs). Urban transport, energy use, buildings, waste management and industry are all significant emitters of both GHGs and health-damaging pollutants such as particulate matter (PM). Several health-damaging pollutants, including black carbon and ozone, are also potent atmospheric warming agents. These short-lived climate pollutants (SLCPs) also harm regional ecosystems and agricultural productivity.

Local-level actions are critical in the global fight against climate change. These can also inform and trigger national-level policy. Health arguments are powerful drivers for smart urban policies that prevent diseases and mitigate climate-warming emissions while contributing to multiple sustainable development objectives. With strong leadership and integrated cross-sectoral planning, cities can be transformed to become thriving centres of health, wellbeing and opportunity.

Sources and trends

Urban air contains pollutants from many different sources, from vehicles to building heating systems. Because cities are densely populated, large numbers of people live close to these sources. These chronic exposures put urban residents at risk of serious health impacts, including noncommunicable diseases (NCDs) such as stroke, heart disease and cancer.
Annual mean particulate matter concentration of assessed towns and cities in the WHO ambient air pollution database, compared to WHO Air Quality Guidelines.

The trends are pointed in the wrong direction. Between 2008 and 2013, air pollution levels increased by an average of 8% in urban areas around the world.

Energy demand is rising, and more people are using private motor vehicles for transportation. In most developing cities where long-term data are available, air quality is getting worse. In low- and middle-income countries (LMICs), 97% of cities with more than 100,000 inhabitants do not meet WHO air quality guidelines. In some of these cities, pollutant concentrations can reach several times WHO recommended limits. But poor air quality is not only a problem in lower-income cities: 40% of high-income cities in Asia and 60% of those in Europe have PM levels that exceed WHO guidelines. Household air pollution is a serious threat to the health of urban residents and a significant source of ambient household pollution, as well. Many urban households around the world rely on polluting fuels and devices for cooking, heating and lighting.

Challenges and gaps

Decision-makers need better access to the latest evidence on the linkages between air pollution, health and climate change, and on the multiple benefits of air pollution interventions. A “health-in-all policies” approach can help urban leaders put their citizens’ health at the center of development strategies. Health evidence and data can also be used to track progress. The health sector must take a leadership role in coordinating with other key urban sectors to foster this paradigm shift. The health sector should also lead by example and ensure the health system – from the health workforce to healthcare facilities – is at the forefront of this transformation.

For many cities in developing countries, a lack of data hampers efforts to target the sources of air pollution. Without adequate information on air quality, designing effective interventions and tracking progress is impossible. Air quality monitoring networks need to be upgraded and further developed in many developing cities, especially in Africa. Multisectoral information systems should also be put in place in order to integrate all data and to facilitate the analytics required for proper planning and decision-making.
Priorities and opportunities

Applying a “health lens” can help decision-makers identify ways to achieve multiple environmental, economic, health and social equity targets. For instance, expanding clean public transit systems and building paths for walking and cycling – and encouraging their use instead of private motorized transport – is a key strategy for reducing air pollution exposure. Such policies lead to lower rates of respiratory and cardiovascular disease, as well as fewer traffic-related injuries and less physical inactivity – both of which are significant causes of mortality in urban populations.

These measures also help create environments that promote health and enables vibrant community life and the integration of the built environment with natural urban ecosystems. This transformation is already taking place, through the integrated, health-centric approach applied by some cities: Paris has converted roads and parking spaces into more walkable and cyclable areas (including an urban beach) and also plans to ban diesel vehicles by 2024 and petrol vehicles by 2030. Other important tools include land-use regulation, tax incentives and reforming building energy codes to encourage investment in energy-efficient and healthier housing. These measures reduce energy and healthcare costs, while also driving down emissions of GHGs.

WHO tools and initiatives

WHO provides multiple resources to help cities improve their air quality. WHO’s Urban Health Initiative (UHI) offers a model process for cities to mainstream health concerns into their planning, and mobilize wider public support for clean air. By making the best use of health evidence, competencies and communications, the UHI provides data, guidance and tools to assess health and economic impacts of urban policies in sectors such as transport, waste, energy and land-use; communicates the results to policymakers and the general public; strengthens the health workforce capacity to advise patients, families and communities on how to protect themselves against air pollution; mobilizes action and tracks progress on health, air quality and the policymaking process.

With regional workshops and current pilot programmes in Accra, Ghana and Kathmandu, Nepal, the UHI is testing new health-centred approaches to urban development and sharing lessons and experiences from city to city. These opportunities are also supporting the development and adaptation of analytical tools for health risk assessment using local expertise and the best available local data. WHO recently updated the AirQ+ software tool (May 2018), enabling urban health experts to quantify deaths and hospitalizations due to local air pollution exposures. In 2017 WHO updated the Health Economic Assessment Tool for Walking & Cycling (HEAT), a tool for estimating the health and economic impacts of making changes in walking and cycling. This is now being adapted for global use.

WHO has also been working on specific guidance and tools to mainstream health in sectoral policies – including those aimed at tackling air pollution – such as the Health in the Green Economy series. This provides specific guidance for the housing and transport sectors.

WHO’s Global Urban Ambient Air Pollution Database has nearly doubled after its recent update (May 2018) and now collates data from over 4300 cities and settlements in 108 countries.

The way forward

The most effective measure of a city’s sustainable development is the good health of its citizens. Healthy cities are resilient and economically thriving environments. Cities with clean air, energy-efficient infrastructure, and accessible green spaces attract more investment and businesses, create more jobs, and offer more opportunity to people from all walks of life. One of the most powerful steps urban leaders can take toward these goals is committing to meet WHO air quality standards by 2030. In doing so, they will help make their cities more health-friendly, cleaner, equitable and climate-resilient places to live and work.