

Mardi 06 Février 2024

Du processus scientifique à la validation de valeurs guides

Interventions magistrales

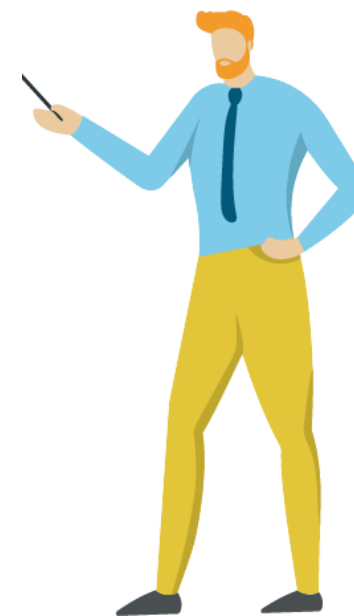
Intervention de :

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Organisation Mondiale de la Santé - Centre européen de
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En visioconférence



Les enjeux sanitaires conduisent à de nouvelles actions pour respecter les nouvelles réglementations

Session magistrale

From scientific findings to regulatory and legislative developments – WHO Air Quality Guidelines

Dorota JAROSIŃSKA

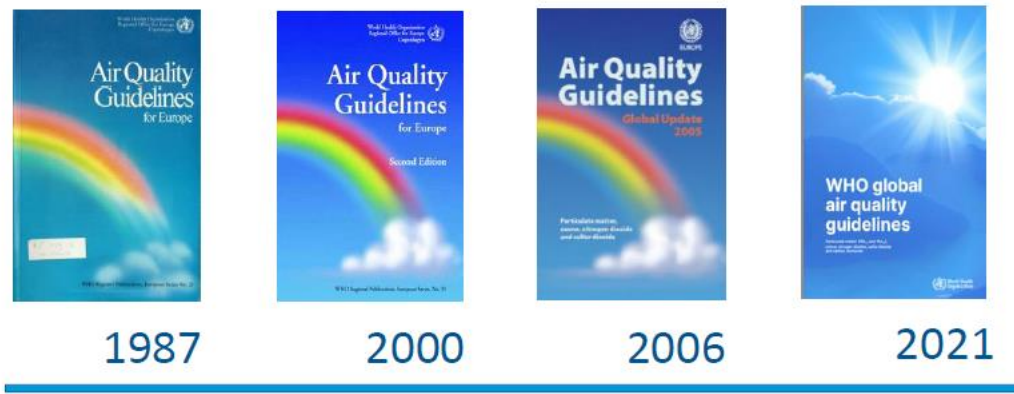
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Air quality and health evidence - WHO milestones

1958 1964 1972 1976-84

WHO technical reports



Robust public health recommendations



Support informed decision-making



Intended for worldwide use



Comprehensive assessment of the evidence

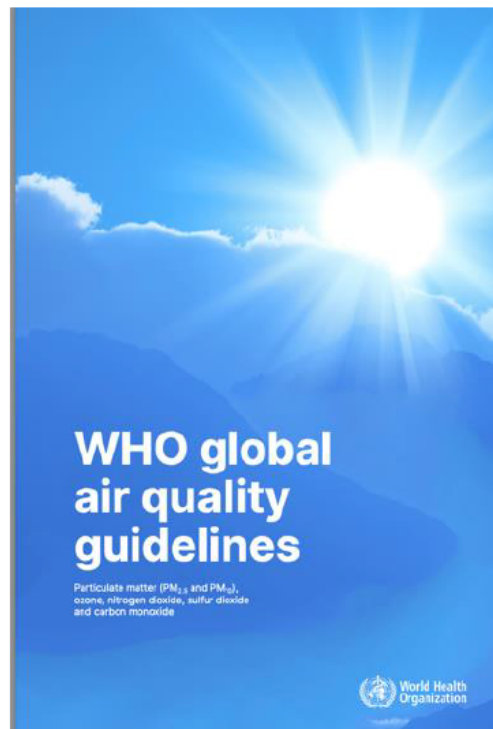


World Health Organization



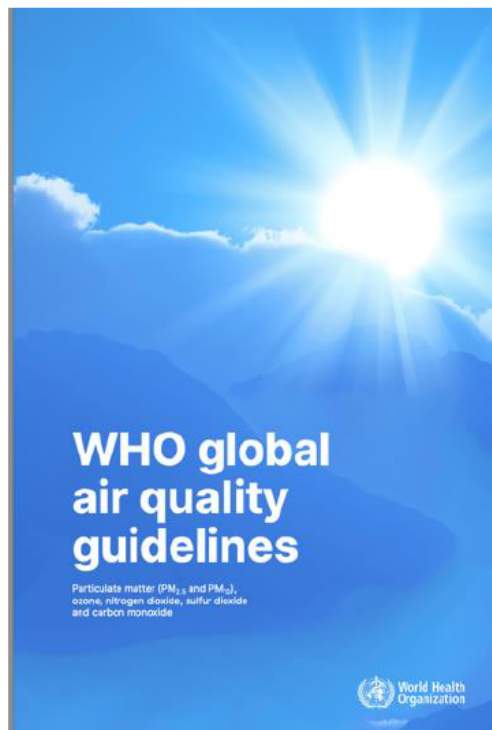
HEALTH FOR ALL

Why the new WHO global AQG?



- Marked increase in the quality and quantity of **evidence** on the health effects of air pollution
- Better insight into global **concentrations** of some pollutants
- Insights into sources of emissions and the contribution of air pollution to the **global burden of disease**
- Importance of addressing health **inequities** related to air pollution
- Significant advances in the worldwide **adoption** of the 2005 air quality guidelines
- Mitigating air pollution has become more central in **WHO and UN activities**

What are the new WHO global AQG



- Identify the levels of air quality necessary to protect public health worldwide
- Provide recommended air quality guideline levels for PM_{2.5}, PM₁₀, O₃, NO₂, SO₂ and CO
- Not legally binding, but serve as an evidence-informed reference for setting standards or policies
- An instrument to design effective measures to achieve reduction of air pollution and, therefore, protect human health
- Do not include recommendations about joint effects of multiple exposures
- Do not apply to occupational settings
- Do not address specific recommendations on policies and interventions

What the WHO global AQG provide

Air quality guideline levels for both long- and short-term exposure in relation to critical health outcomes

Interim targets to guide reduction efforts for the achievement of the air quality guideline levels

Good practice statements on the management of certain types of particulate matter for which evidence is insufficient to derive quantitative air quality guideline levels, but points to their health relevance

Pollutant	Averaging time	IT1	IT2	IT3	IT4	AQG level
PM _{2.5} , µg/m ³	Annual	35	25	15	10	5
PM _{2.5} , µg/m ³	24-hour ^a	75	50	37.5	25	15
PM ₁₀ , µg/m ³	Annual	70	50	30	20	15
PM ₁₀ , µg/m ³	24-hour ^a	150	100	75	50	45
O ₃ , µg/m ³	Peak season ^b	100	70	–	–	60
O ₃ , µg/m ³	8-hour ^a	160	120	–	–	100
NO ₂ , µg/m ³	Annual	40	30	20	–	10
NO ₂ , µg/m ³	24-hour ^a	120	50	–	–	25
SO ₂ , µg/m ³	24-hour ^a	125	50	–	–	40
CO, mg/m ³	24-hour ^a	7	–	–	–	4

Good practice statements

SAND AND DUST STORMS



- Maintain suitable AQ management and dust forecasting programmes.
- Maintain AQ monitoring programmes and reporting procedures.
- Conduct epidemiological and toxicological studies.
- Implement wind erosion control through expansion of green spaces.
- Clean streets in urban areas with high population density and low rainfall to prevent resuspension by road traffic.

BLACK/ELEMENTAL CARBON



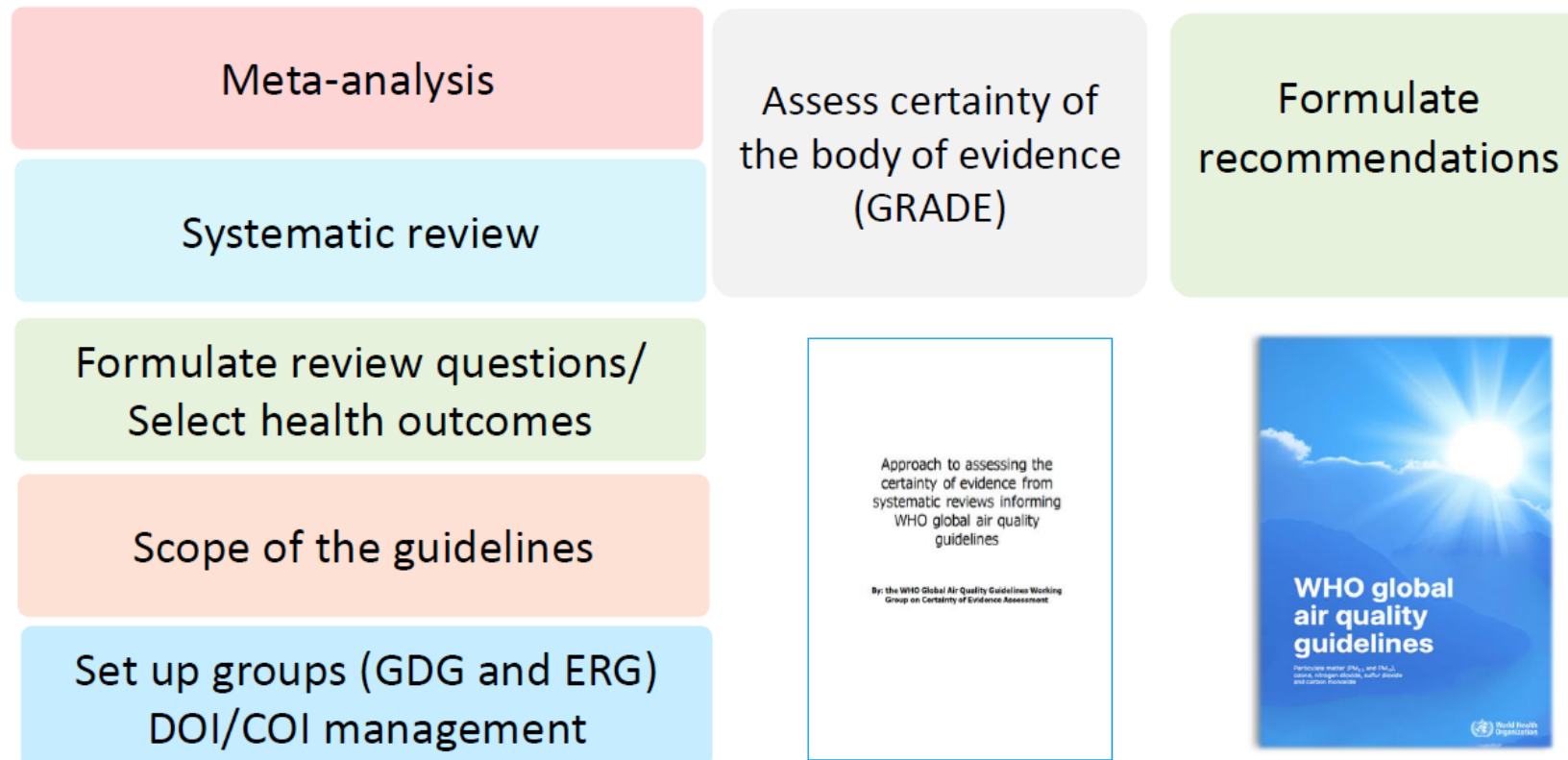
- Make systematic measurements, in addition to existing monitoring of pollutants covered by AQGs.
- Undertake the production of emission inventories, exposure assessments and source apportionment.
- Take measures to reduce emissions, and, where appropriate, develop standards (or targets) for ambient concentrations.

ULTRAFINE PARTICLES



- Quantify in terms of particle number concentration (PNC) for a size range with a lower limit of ≤ 10 nm and no restriction on the upper limit.
- Expand common AQ monitoring by integration UFP monitoring.
- Distinguish between low and high PNC to guide decisions on the priorities of source emission control.
- Utilize emerging science and technology for the assessment of exposure.

Main steps in the development of WHO guidelines



Systematic reviews of evidence

Pablo Orellano, Julieta Reynoso, Nancy Quaranta, Ariel Bardach, Agustin Ciapponi. Short-term exposure to particulate matter (PM10 and PM2.5), nitrogen dioxide (NO2), and ozone (O3) and all-cause and cause-specific mortality: Systematic review and meta-analysis

Kuan Ken Lee, Nicholas Spath, Mark R. Miller, Nicholas L. Mills, Anoop S.V. Shah. Short-term exposure to carbon monoxide and myocardial infarction: A systematic review and meta-analysis.

Jie Chen, Gerard Hoek. Long-term exposure to PM and all-cause and cause-specific mortality: A systematic review and meta-analysis.

Peijue Huangfu, Richard Atkinson. Long-term exposure to NO2 and O3 and all-cause and respiratory mortality: A systematic review and meta-analysis

Pablo Orellano, Julieta Reynoso, Nancy Quaranta. Short-term exposure to sulphur dioxide (SO2) and all-cause and respiratory mortality: A systematic review and meta-analysis

Xue-yan Zheng, Pablo Orellano, Hua-liang Lin, Mei Jiang, Wei-jie Guan. Short-term exposure to ozone, nitrogen dioxide, and sulphur dioxide and emergency department visits and hospital admissions due to asthma: A systematic review and meta-analysis



Main uses of the WHO AQG

As an evidence-informed tool

To guide legislation and policies, to reduce levels of air pollutants and decrease the disease burden due to air pollution exposure worldwide



To stimulate research

To identify critical data gaps for future research to better protect people from the harmful effects of air pollution



For climate action

Reducing air pollution and mitigating climate change together act to protect health



Policy uptake of WHO AQG – an example of the European Union



“The Commission will draw on the lessons learnt from the evaluation of the current air quality legislation.

It will also propose to strengthen provisions on monitoring, modelling and air quality plans to help local authorities achieve cleaner air.

The Commission will notably propose to revise air quality standards to align them more closely with the World Health Organization recommendations.”



Communication on the European Green Deal (COM/2019/640 final)



Energy, Climate change, Environment

Environment

Home > Topics > Air > Air Quality > Revision of the Ambient Air Quality Directives

Revision of the Ambient Air Quality Directives

Improving the EU's air quality standards for zero pollution by 2050.

On 26 October 2022, as part of the European Green Deal, the Commission has proposed to revise the Ambient Air Quality Directives. The revision aligns the [air quality standards](#) more closely with the recommendations of the World Health Organization (see the latest [WHO Air Quality Guidelines](#) [\[3\]](#), published on 22 September 2021). For example, the annual limit value for fine particulate matter (PM2.5) will be reduced by more than half.

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[Revision of the Directives](#)

[Stakeholder consultation](#)

Revision of the Directives

The [proposal is available here](#) and

[Revision of the Ambient Air Quality Directives - European Commission \(europa.eu\)](#)

The **Budapest Declaration** and its **Road Map to 2030** accelerate progress and **action** towards **addressing health challenges** related to:

- ✓ environmental pollution
- ✓ climate change
- ✓ loss of biodiversity

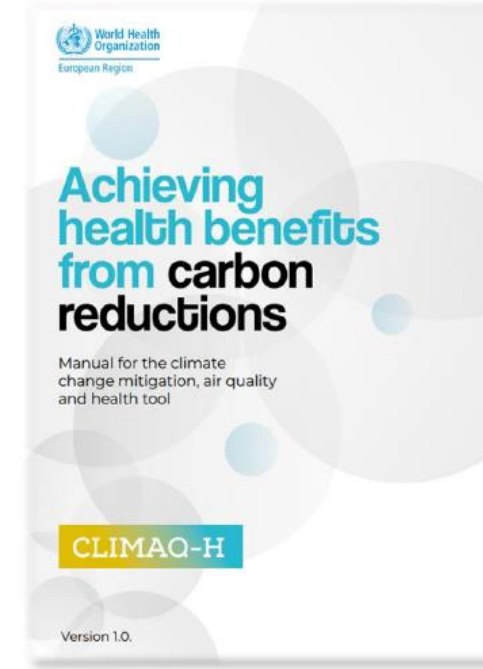
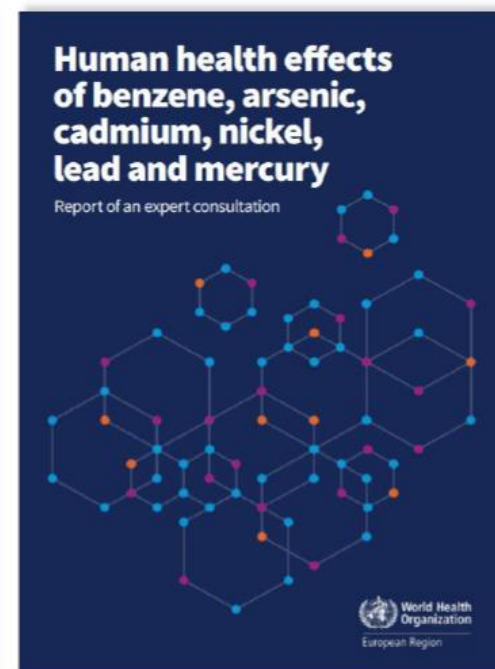
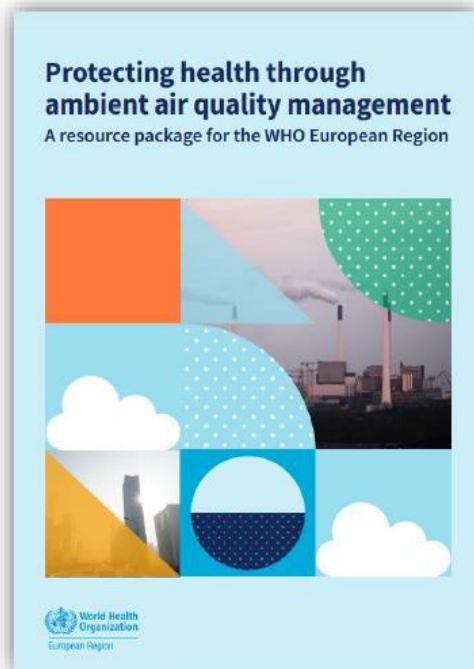
while recovering from the COVID-19 crisis

Our commitment: We will continue and enhance efforts to reduce the substantial burden of diseases caused by pollution and work to reduce exposure and prevent adverse health impacts of pollution in the future, by:...

26. leveraging the existing platforms, like the Joint Task Force on Health Aspects of Air Pollution under the UNECE Convention on Long-range Transboundary Air Pollution, and tools to strengthen capacities and systems to monitor air pollutants and to assess the health impacts of air pollution;



WHO resources on air quality and health



The health sector has a key role

The health sector has a role in:

raising awareness of the impact of air quality on health;

advising the public and patients about how the impact of air pollutants can be mitigated at an individual level;

gathering evidence on health effects from air pollution;

and joining advocacy efforts at the national and international levels to ensure that the health arguments are heard.



Engagement of the health community is crucial

WHO AQG - members of the main groups and funding sources

Guideline Development Group		Systematic Review Team		Funding / in-kind support
Marwan Al-Dimashki	Nguyen Thi Kim Oanh	Jie Chen	Wei-jie Guan	
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Bert Brunekreef	Lidia Morawska	Ariel Bardach	Kuan Ken Lee	
Aaron J. Cohen	Kaye Patdu	Agustin Ciapponi	Mark R. Miller	
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Lu Fu	Horacio Riojas-Rodríguez	Nancy Quaranta	Anoop S.V. Shah	
Sarath K. Guttikunda	Jonathan Samet	Julieta Reynoso	Nicholas Spath	
Mohammad Sadegh Hassanvand	Martin Williams	External Review Group 65 experts provided input at different stages of the process 14 stakeholder organizations participated in the consultation of the document		
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Wei Huang	Xia Wan			
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