What do we know about air pollution, COVID-19 and NCDs

World Health Organization

International Day of Clean Air for blue sky
7 September 2020

Air Pollution, NCDs and COVID-19: Challenges and Opportunities for a Healthy Recovery
WHO / PAHO webinar

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Overview

1 Air pollution : the basics

2 Air pollution & NCDs

3 Air pollution & COVID-19

4 Conclusions

Air pollution is a health issue

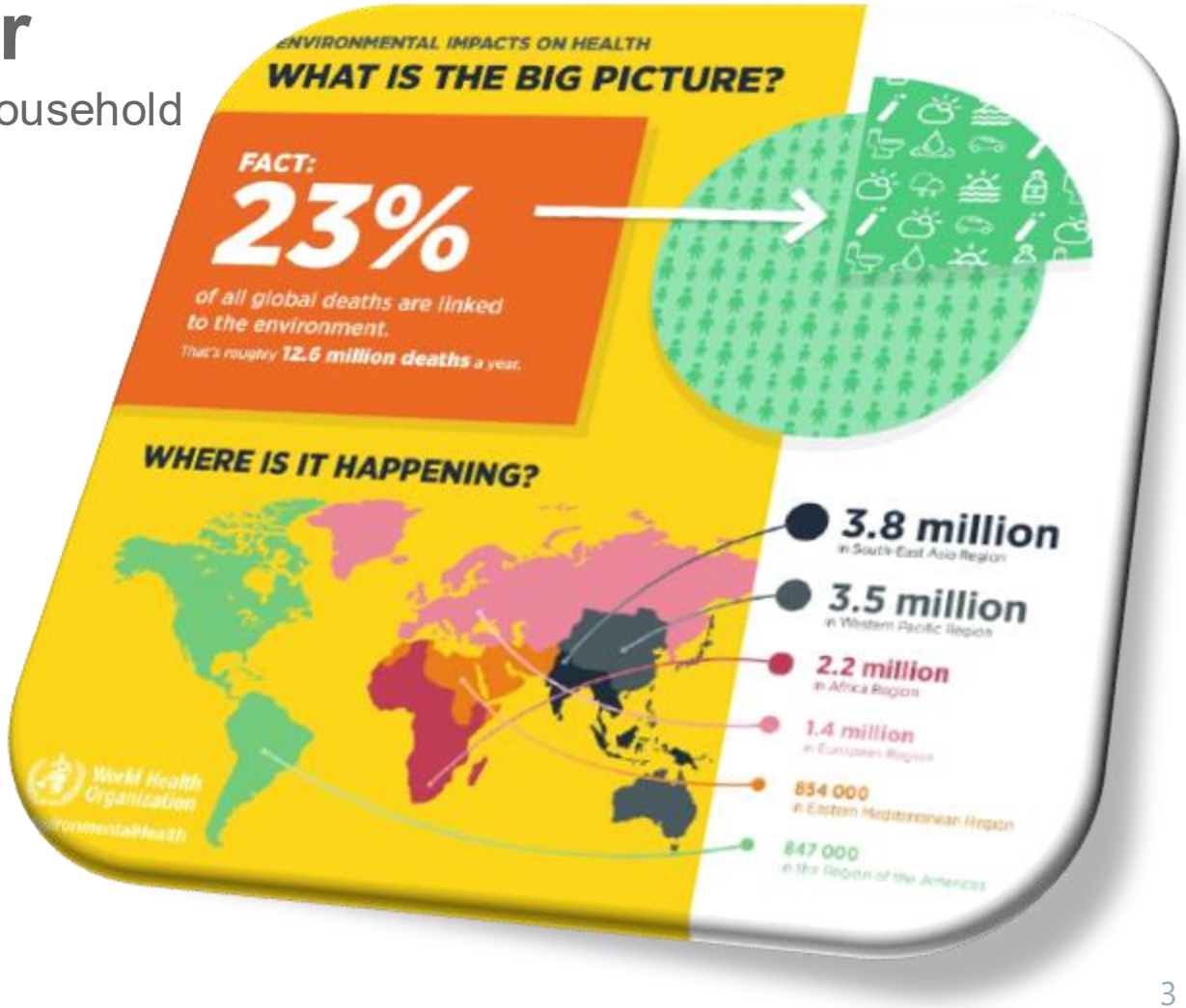
7 million

deaths per year

as a result of ambient and household air pollution exposure

Ambient air pollution
4.2 million deaths/year

Household air pollution
3.8 million deaths/year



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Air pollution : the basics

1. A little bit of history

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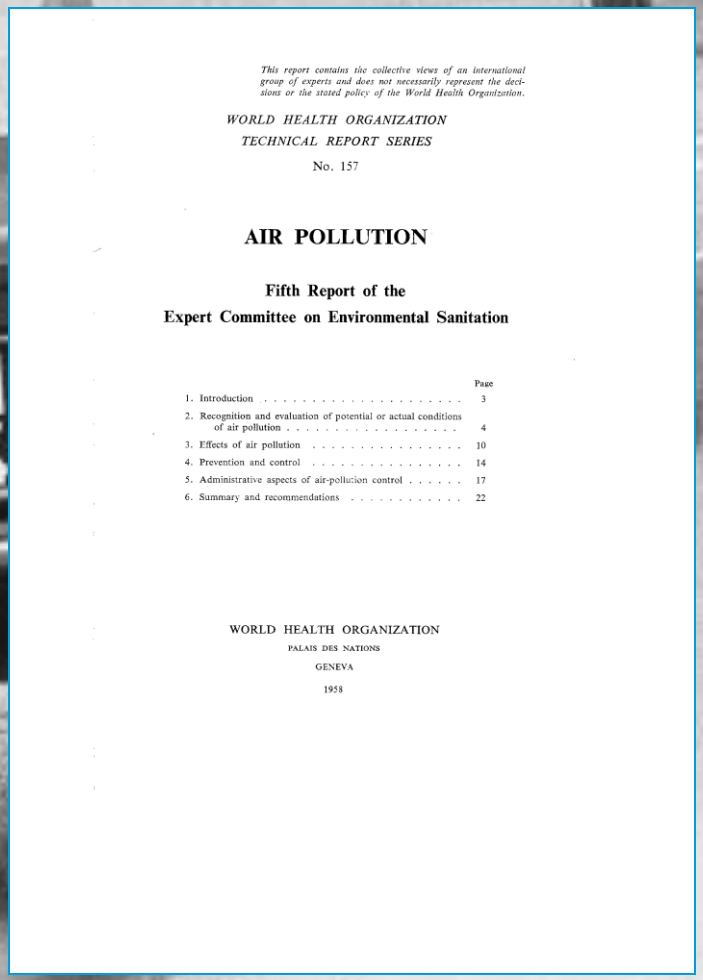

This report contains the collective views of an international group of experts and does not necessarily represent the decisions or the stated policy of the World Health Organization.

WORLD HEALTH ORGANIZATION
TECHNICAL REPORT SERIES
No. 157

AIR POLLUTION

Fifth Report of the
Expert Committee on Environmental Sanitation

WORLD HEALTH ORGANIZATION
PALAIS DES NATIONS
GENEVA
1958

In the beginning there was…

WHO (1958). Air pollution: fifth report of the Expert Committee on Environmental Sanitation. Geneva: World Health Organization (WHO Technical Report Series, No. 157).

Milestones on air quality and health

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1958

1964

1972

(1976-84)

WHO Technical reports

1987

2000

2005

2009

2010

2014

WHO Air Quality Guidelines

WHO Guidelines for Indoor Air Quality

2015 → **WHA Resolution 68.8**

2018 → **First WHO Global Conference on Air Pollution and Health**

2020 → **First UN Day of Clean Air for blue sky**

Geographical distribution of published research in outdoor air pollution and respiratory health (1900-2017)

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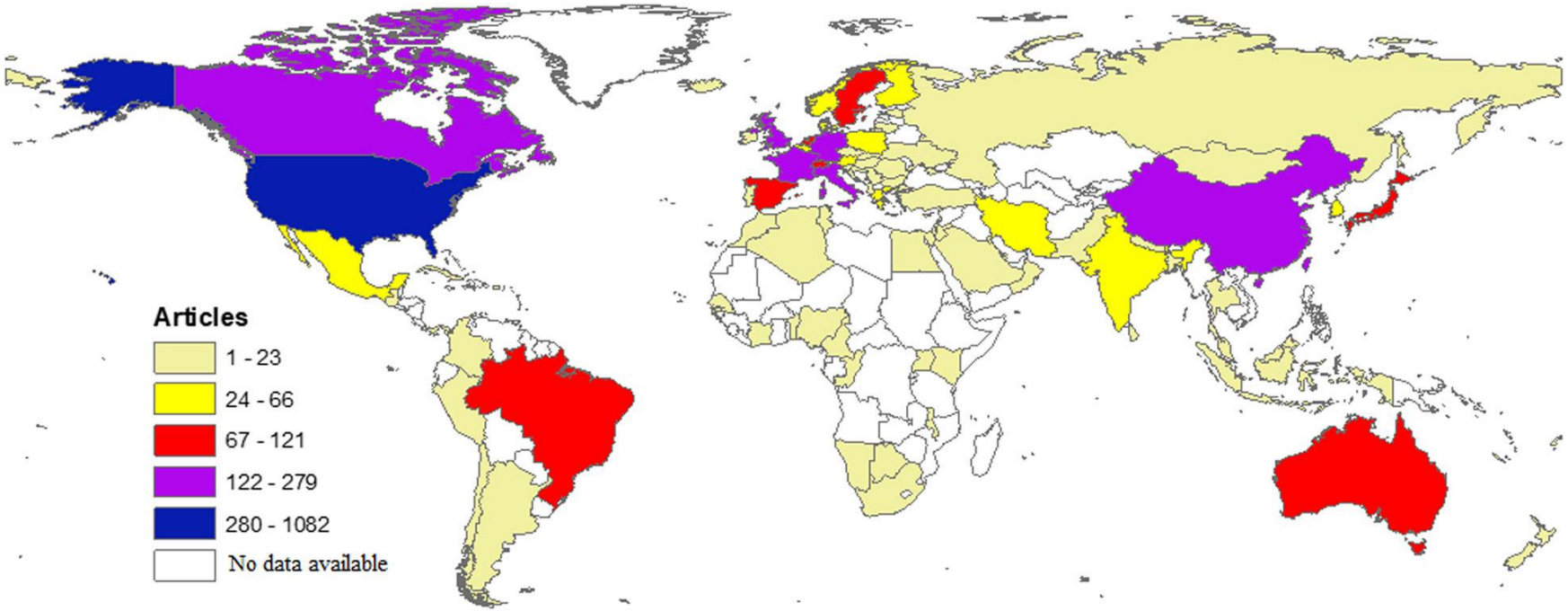
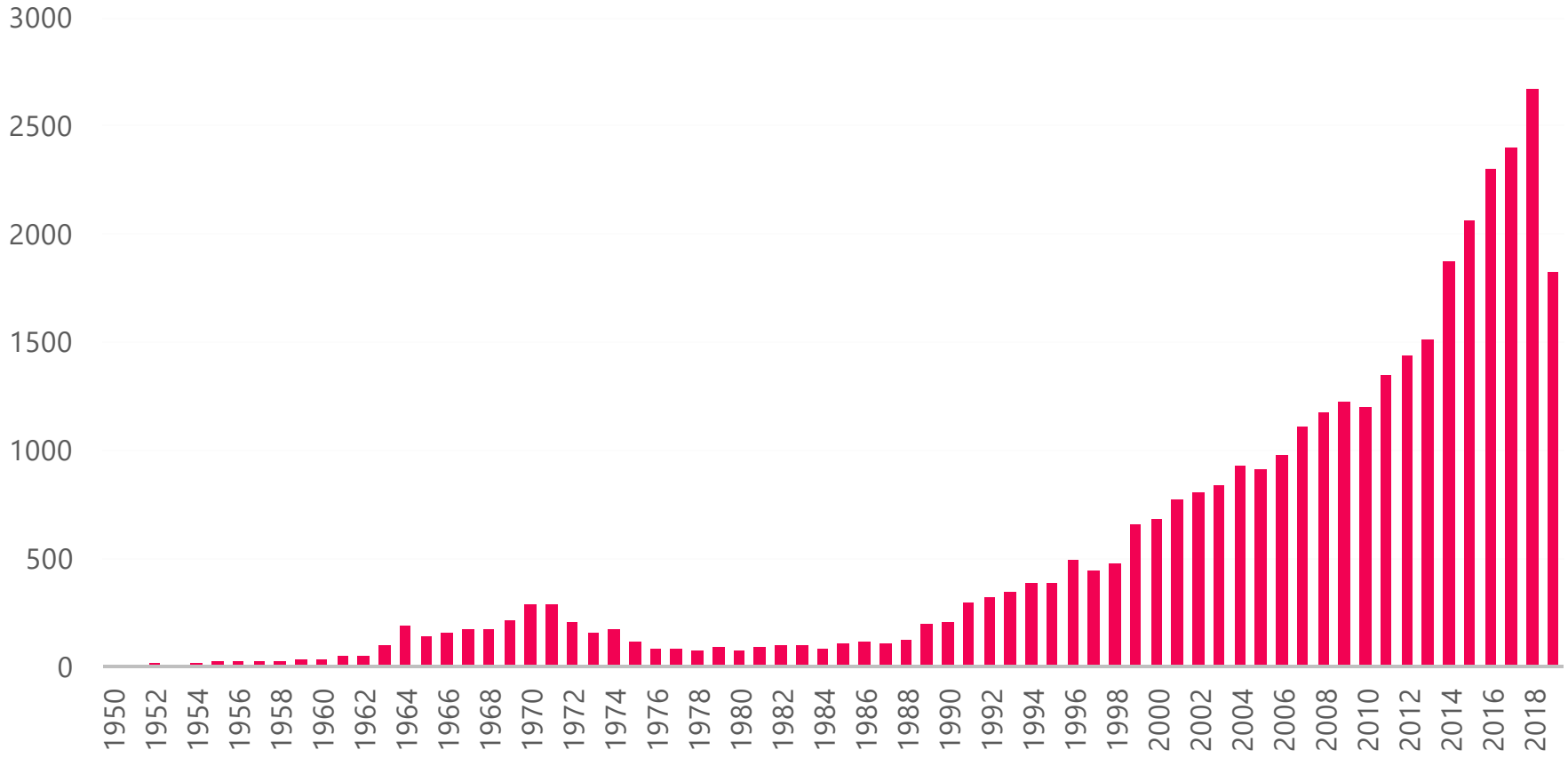


Sweileh et al. Multidisciplinary Respiratory Medicine (2018)

Number of publications / year with key words “Air pollution and health” in PubMed, 1950-August 2019



2. Health effects of Particulate Matter

(Almost) every organ is affected

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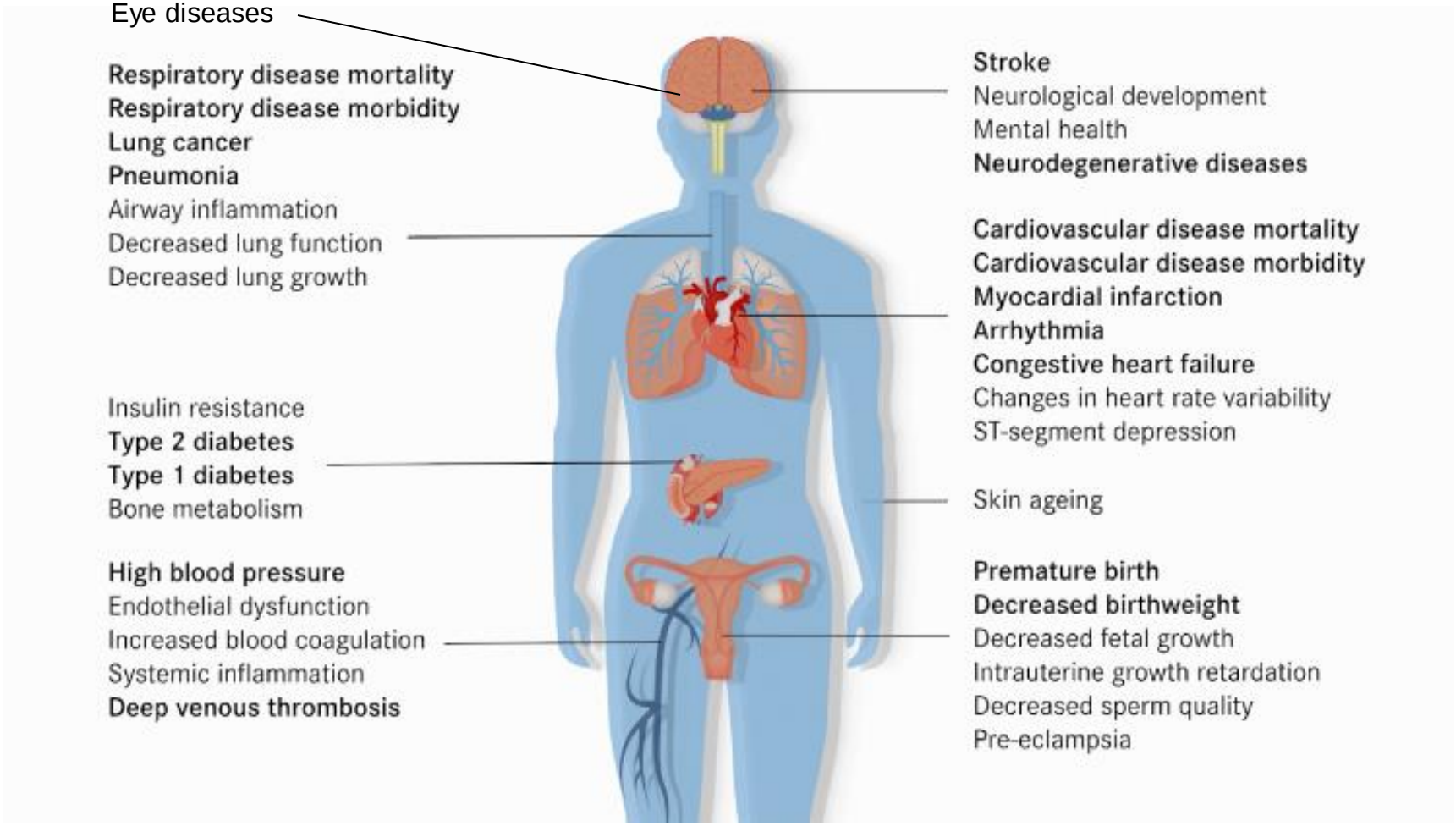

Slide courtesy of Annette Peters

3. There is enough data on exposure and health impacts

Global monitoring and reporting

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Air quality in cities

91% of the world is exposed

Clean energy access

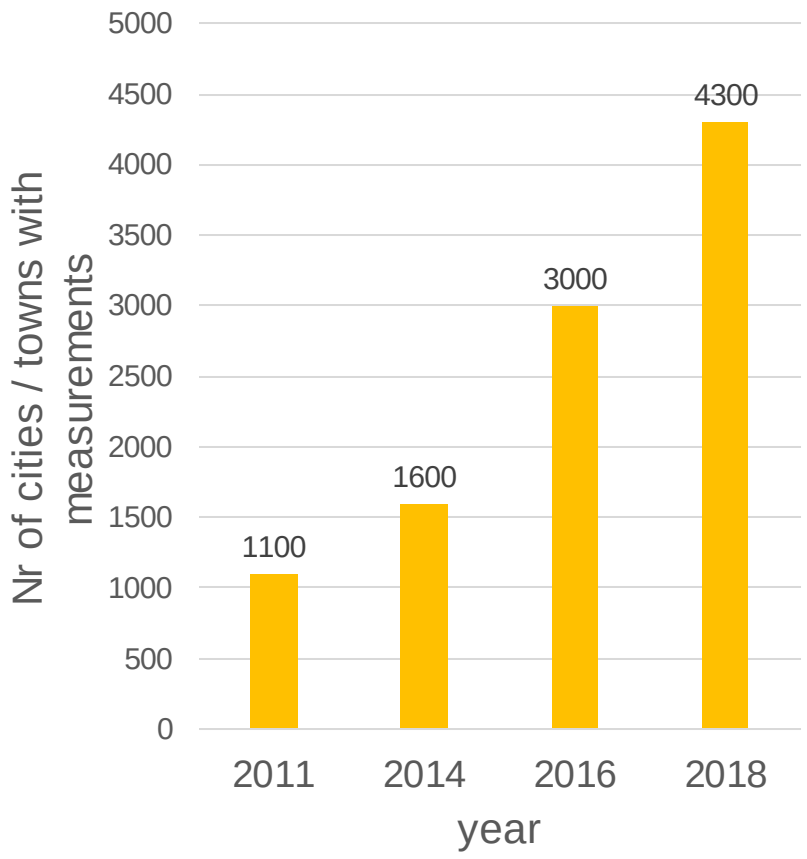
3 billion people rely on polluting fuels

Mortality from air pollution

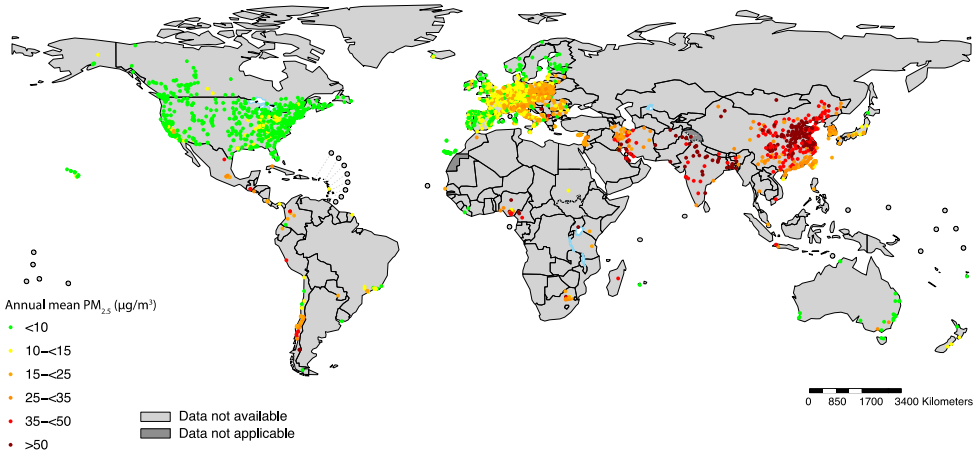
7 million deaths

Increase in publicly available information & monitoring of air quality

Number of cities and towns with PM10 and/or PM2.5 measurements in the WHO air quality database



- Increasing number of air quality data
- Increasing interest from countries to share data
- Increase in all regions, but mostly in Europe



$PM_{2.5/10}$: Particulate matter of a diameter equal or less than 2.5/10 microns

Beyond PM monitoring, source apportionment is crucial

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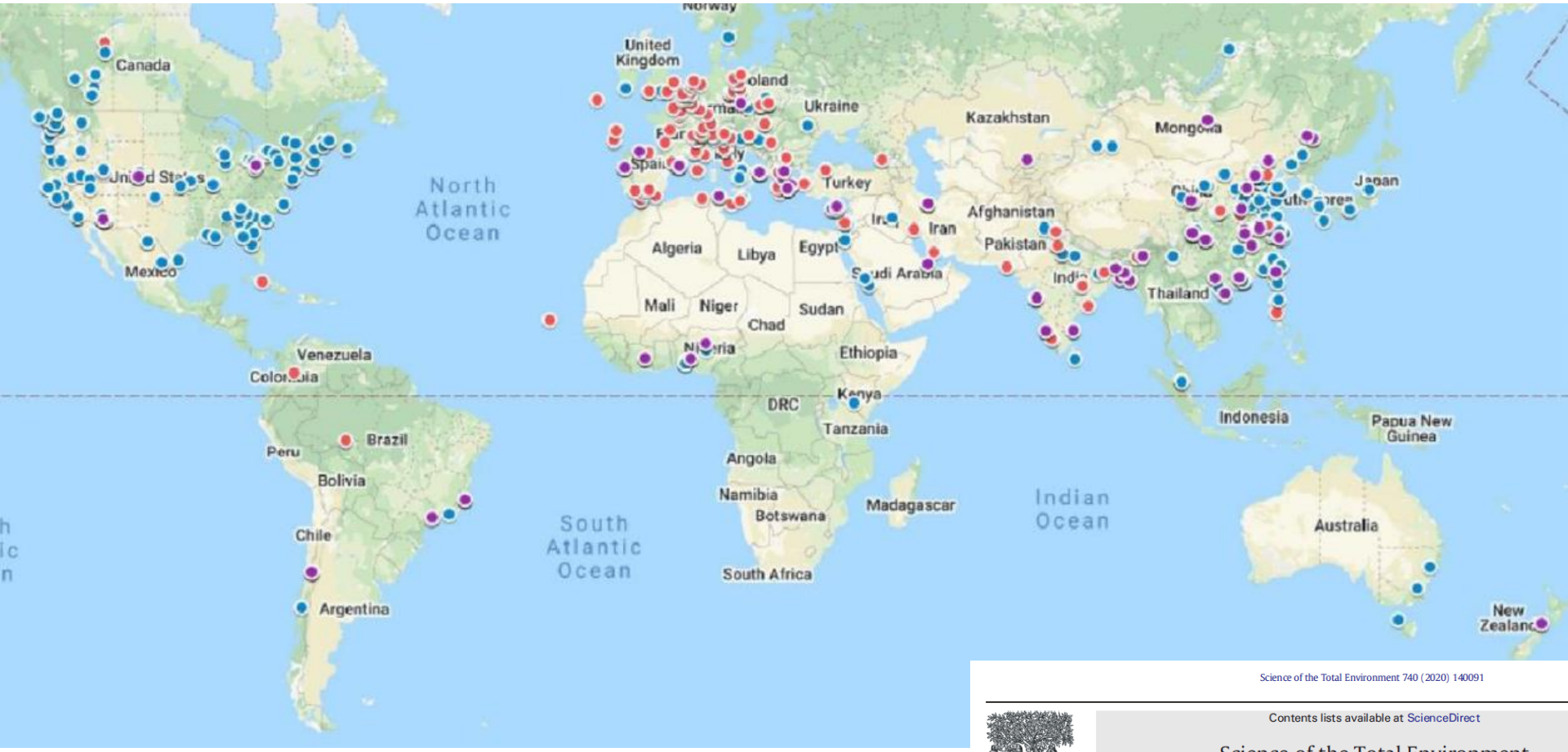

… but often missing or incomplete

Science of the Total Environment 740 (2020) 140091

Contents lists available at ScienceDirect

Science of the Total Environment

journal homepage: www.elsevier.com/locate/scitotenv

Review

Global review of recent source apportionments for airborne particulate matter

Philip K. Hopke [a,b,*], Qili Dai [c], Linxuan Li [c], Yinchang Feng [c]

Uptake of WHO AQG in air quality standards – $PM_{2.5}$

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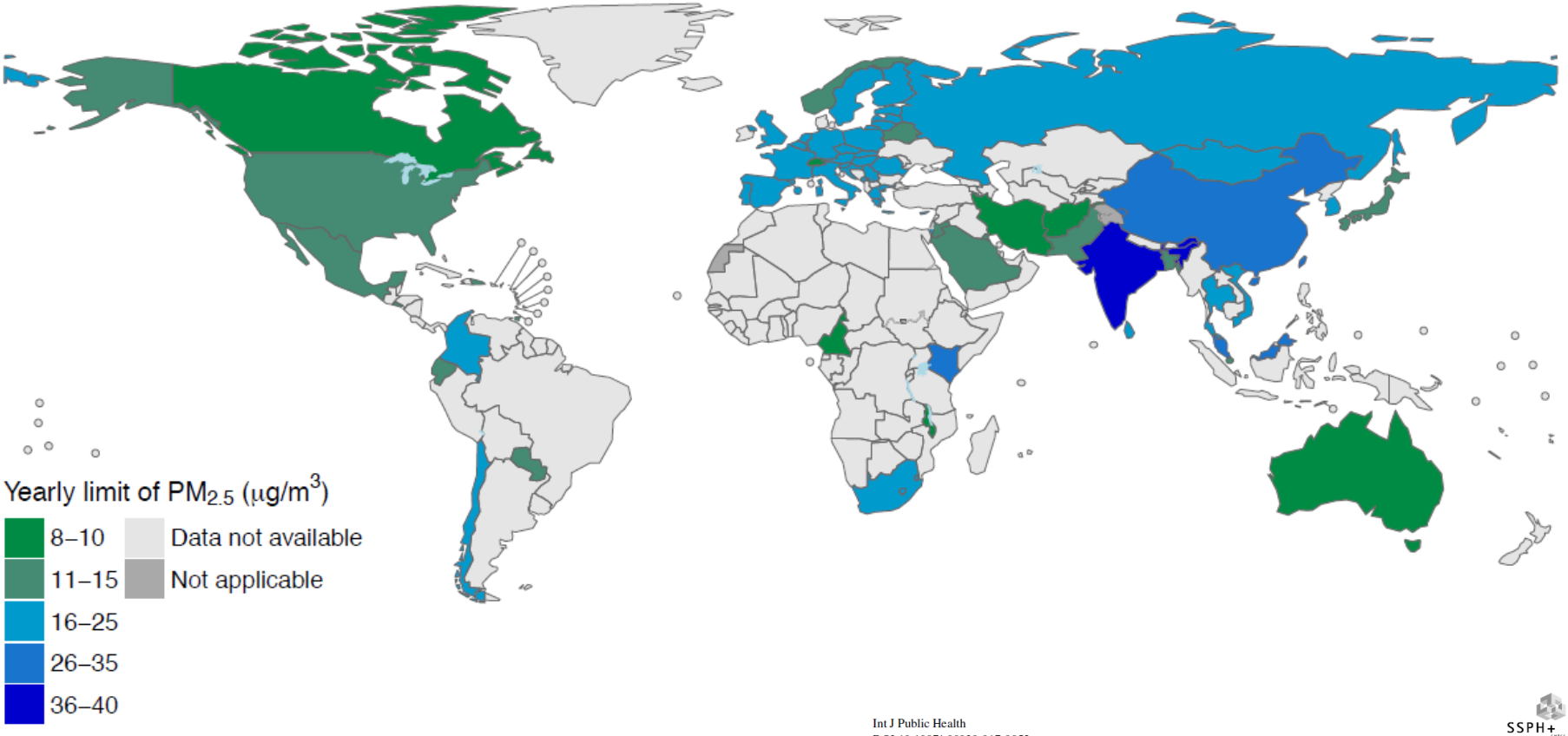

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or rea or of its authorities, or concerning the delimitation of its frontiers and boundaries. Dottend and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

App: https://whoairquality.shinyapps.io/AirQualityStandards/

Int J Public Health
DOI 10.1007/s00038-017-0952-y

SSPH+

ORIGINAL ARTICLE

CrossMark

Time to harmonize national ambient air quality standards

Meltem Kutlar Joss[1,2] · Marloes Eeftens[1,2] · Emily Gintowt[1,2] · Ron Kappeler[1,2] · Nino Künzli[1,2]

CLIMATE SUMMIT 2019 A RACE WE CAN WIN

OVER 40 countries and **70 cities** representing **750 million people** answered WHO's call to provide citizens with **CLEAN AIR** by 2030.

4. Tools exist to engage with other sectors

Analytical tools to support Health and Economic Impact Assessments and policy choices

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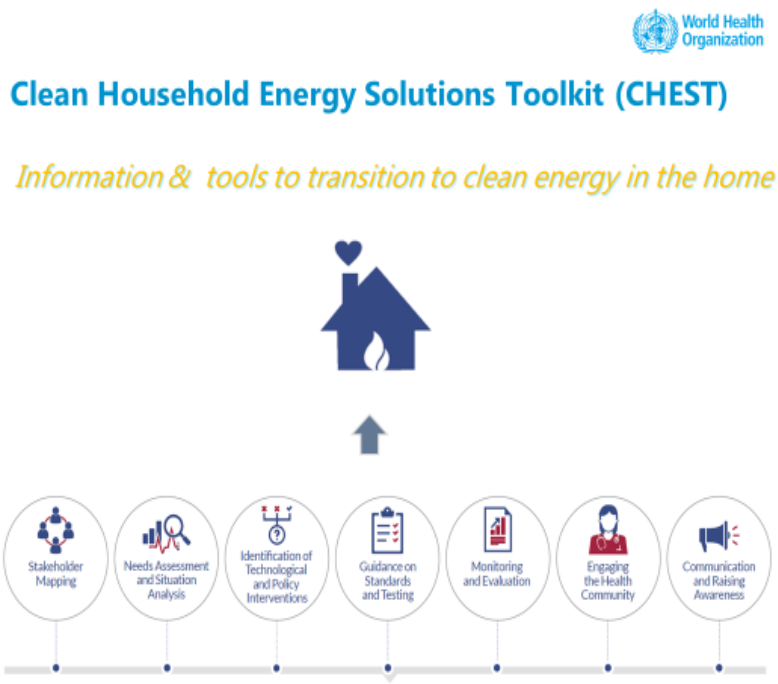

- AirQ+ (air pollution)
- ISThAT (transportation)
- HEAT (walking and cycling)
- GreenUR (green space)
- HOMES (household energy)

Development and application of analytical tools to support the assessment of the health and economic impacts of interventions in key sectors, including on transport, household energy, green space and land-use, solid waste management (open source, flexible, evidence-based tools)

Air pollution & NCDs

Mortality from air pollution, 2016

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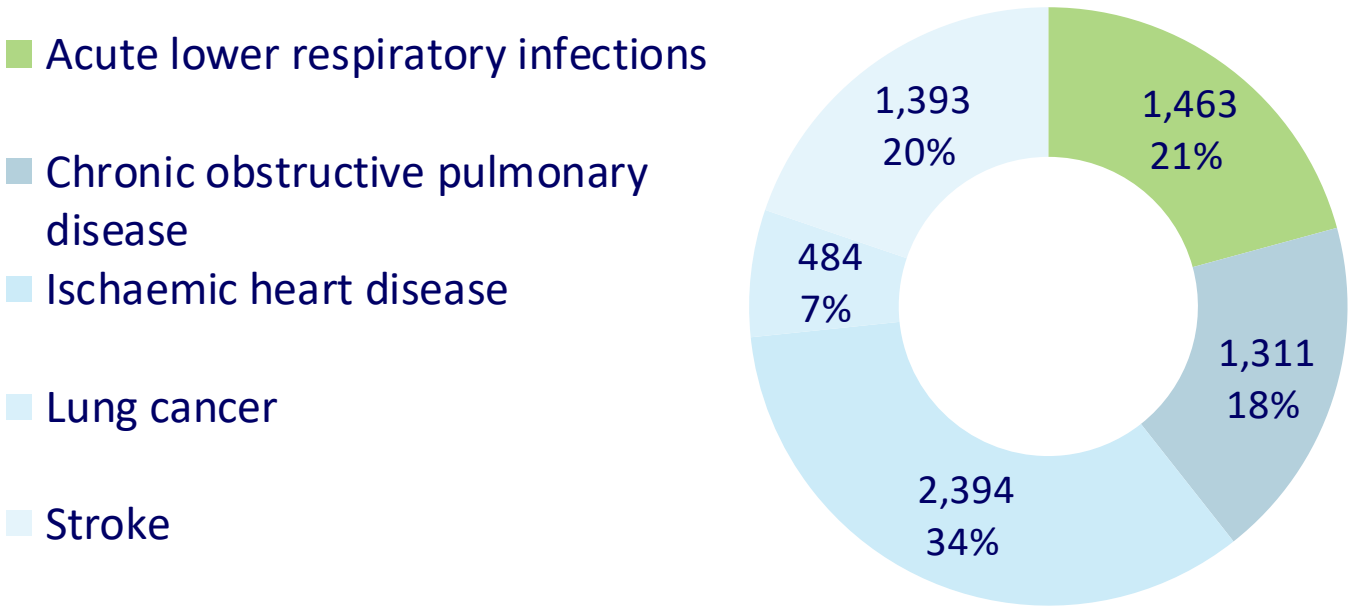
7 millions deaths – 89% are non communicable disease



Air pollution moves up on the global NCD agenda – moving towards policy options to address air pollution

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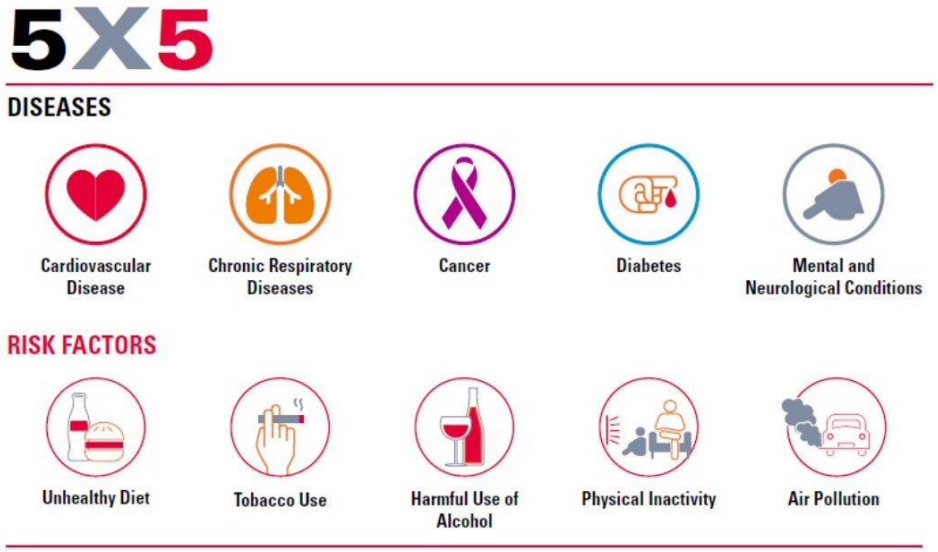

'Best buys' and other recommended interventions for the prevention and control of noncommunicable diseases

Air pollution is the **second leading cause of deaths** from noncommunicable diseases (NCDs), after tobacco-smoking.

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SUSTAINABLE DEVELOPMENT GOALS

Best buys for tackling NCDs

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'Best buys' and other recommended interventions for the prevention and control of noncommunicable diseases

TACKLING NCDs

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SUSTAINABLE DEVELOPMENT GOALS

NCDs / Objective 4

Manage chronic respiratory disease

'Best buys' and other recommended interventions

'Effective interventions with CEA >I$100 per DALY averted in LMICs	Symptom relief for patients with asthma with inhaled salbutamol
	Symptom relief for patients with chronic obstructive pulmonary disease with inhaled salbutamol
	Treatment of asthma using low dose inhaled beclometasone and short acting beta agonist
Other recommended interventions from WHO guidance (CEA not available)	Access to improved stoves and cleaner fuels to reduce indoor air pollution
	Cost-effective interventions to prevent occupational lung diseases, for example, from exposure to silica, asbestos
	Influenza vaccination for patients with chronic obstructive pulmonary disease

An up-to-date list of WHO tools and resources for each objective can be found at http://www.who.int/nmh/ncd-tools/en

Air pollution as part of NCD coordination at country level

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UN INTERAGENCY TASK FORCE ON NCDs
#beatNCDs @un_ncd

HEALTH, ENVIRONMENT AND CLIMATE CHANGE COALITION

World Health Organization – UN Environment – World Meteorological Organization- United Nations Framework Convention on Climate Change

Thematic Working Group on NCDs and the Environment

- **Platform for UN and non-state actors to effectively collaborate on NCDs and the environment, with specific focus on Air Pollution.**
- **Have standard operating procedures for joint programming missions of the Task Force on air pollution and NCDs.**
- **Join NCD programming missions to address air pollution/environmental determinants and health.**
- **Mapping existing networks (NGOs, medical societies, countries, cities etc) and agreements that are working towards reducing air pollution levels in order to determine how the UN system as a whole can contribute to ongoing efforts.**
- **Further contribute to the development of NCD/pollution investment cases (building on NCD investment case work done to date) after completion of the interventions of catalogue**

Air pollution & COVID-19

What do we know ?

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- The **potential links** between exposure to **poor air quality** and **vulnerability** to the impacts of **COVID-19** are being investigated by the health and scientific community
- Air pollution is known to have **detrimental effects** on the **respiratory** and **cardiovascular** systems, as well as impacts **other diseases** that have been **shown to raise the risk of COVID-19 severity**.
- It is hence crucial to consider **improved air quality as an additional measure** to help reduce the burden placed on people's health as well as healthcare systems.

What can we do now ?

- **Define near-term and longer-term research priorities** for strengthening the knowledge on the links between air pollution and COVID-19, including the impact on the lockdown and reopening measures.
- In any case, it is **crucial to continue to strengthen** measures, laws, and standards needed to prevent and **control air pollution emissions**.
- COVID-19 pandemic is an opportunity for a **healthy recovery***, especially given the **synergies with climate change** and air pollution agendas

*WHO Manifesto for a healthy recovery:
https://www.who.int/news-room/feature-stories/detail/who-manifesto-for-a-healthy-recovery-from-covid-19

Conclusions

Health Sector is a key player in addressing air pollution

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- **Synthetize evidence**
- Develop **evidence-based guidelines** supporting effective interventions
- Use **Health Impact Assessment (HIA) and other tools** to assess policies and their health impacts
- Guide, define and **monitor exposure and health indicators** to measure results and contribute tracking to the SDGs (7.1.2, 11.6.2, 3.9.1)
- **Advocate for actions** that prevent death and disease - raise the level of ambition
- **Act as convening power** for Ministries of Health, Energy and Environment to effectively address public health issues

Equipping health care workers to address air pollution issues

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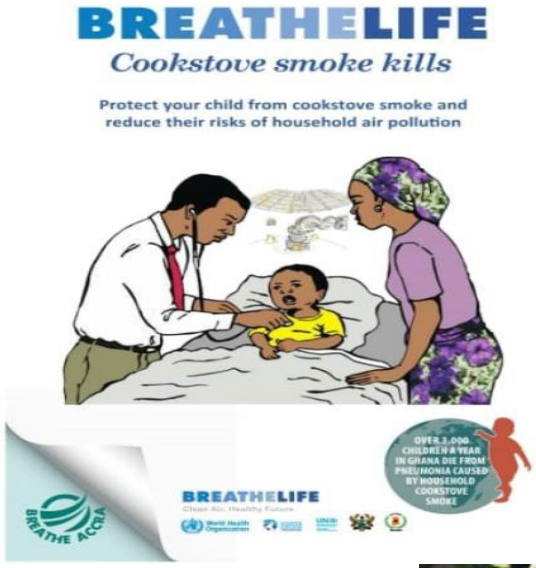

URBAN HEALTH INITIATIVE

An enhanced global response to the adverse health effects of air pollution

Community Health Workers starting their daily routine in Cajamarca, Peru. Photo credit: PAHO Peru

KEY MESSAGES

- There is **plenty of evidence** on air pollution and health, and there is no excuse to wait for more
- Beyond monitoring, sources of air pollution need to be identified to **target key sectors** and develop healthy policies
- Tools to assess the health impacts of sectoral policies exist
- COVID-19 pandemic is an opportunity for a **healthy recovery***, especially given the **synergies with climate change** and air pollution agendas

*WHO Manifesto for a healthy recovery:
https://www.who.int/news-room/feature-stories/detail/who-manifesto-for-a-healthy-recovery-from-covid-19

Thank you

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WHO page for the UN Clean Air Day:

https://www.who.int/news-room/events/detail/2020/09/07/default-calendar/international-day-of-clean-air-for-blue-skies

Videos on air pollution and health :

https://www.who.int/teams/environment-climate-change-and-health/air-quality-and-health/videos/mosaic