AIR POLLUTION AND CHILD HEALTH

Prescribing clean air

SUMMARY

World Health Organization

AIR POLLUTION AND CHILD HEALTH

Prescribing clean air

SUMMARY

World Health Organization

WHO/CED/PHE/18.01

Suggested citation. Air pollution and child health: prescribing clean air. Summary. Geneva: World Health Organization; 2018 (WHO/CED/PHE/18.01). Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at http://apps.who.int/iris.

Sales, rights and licensing. To purchase WHO publications, see http://apps.who.int/bookorders. To submit requests for commercial use and queries on rights and licensing, see http://www.who.int/about/licensing.

Design by L'IV Com Sàrl

Printed in Switzerland

CONTENTS

PREFACE

This report summarizes the latest scientific knowledge on the links between exposure to air pollution and adverse health effects in children. It is intended to inform and motivate individual and collective action by health care professionals to prevent damage to children's health from exposure to air pollution. Air pollution is a major environmental health threat. Exposure to fine particles in both the ambient environment and in the household causes about seven million premature deaths each year *(1,2)*. Ambient air pollution alone imposes enormous costs on the global economy, amounting to more than US$ 5 trillion in total welfare losses in 2013 *(3)*.

> The evidence is clear: air pollution has a devastating impact on children's health.

This public health crisis is receiving more attention, but one critical aspect is often overlooked: how air pollution affects children in uniquely damaging ways. Recent data released by the World Health Organization (WHO) show that air pollution has a vast and terrible impact on child health and survival. Globally, 93% of all children live in environments with air pollution levels above the WHO guidelines (see the full report, *Air pollution and child health: prescribing clean air (4)*). More than one in every four deaths of children under 5 years of age is directly or indirectly related to environmental risks *(5)*. Both ambient air pollution and household air pollution contribute to respiratory tract infections that resulted in 543 000 deaths in children under the age of 5 years in 2016 *(1)*.

Although air pollution is a global problem, the burden of disease attributable to particulate matter in air is heaviest in low- and middle-income countries (LMICs), particularly in the WHO African, South-East Asia, Eastern Mediterranean and Western Pacific regions *(1,6)*. LMICs in these regions – especially the African Region – have the highest levels of exposure to household air pollution due to the widespread use of polluting fuels and technologies for basic daily needs, such as cooking, heating and lighting *(7)*. Poverty is correlated with high exposure to environmental health risks. Poverty can also compound the damaging health effects of air pollution, by limiting access to information, treatment and other health care resources.

The enormous toll of disease and death revealed by these new data should result in an urgent call to action for the global community – and especially for those in the health sector. Strong action to reduce exposure to air pollution offers an unparalleled opportunity to protect the health of children everywhere. Health professionals have a central role to play in this effort. Health effects experienced early in life can increase a child's future risk of disease and lead to lifelong consequences. A child who is exposed to unsafe levels of pollution early in life can thus suffer a "life sentence" of illness. Health professionals are well positioned to communicate with families, communities and decision-makers about these and other serious risks of exposure to air pollution.

The Sustainable Development Goals (SDGs) recognize the importance of social and environmental factors as determinants of health. All the SDGs are clearly linked to health-related targets, reflecting the growing awareness that health, environmental and poverty alleviation are interconnected – that ensuring healthy lives for all (SDG 3) and making cities inclusive, safe, resilient and sustainable (SDG 11) require universal access to energy (SDG 7) and hinge upon combatting climate change (SDG 13). The launch of the 2030 Agenda for Sustainable Development offers an unparalleled opportunity to increase action to address the environmental hazards that undermine children's health. Implementing evidence-based policies and health practices to protect children from air pollution will, in turn, be essential to realizing the Sustainable Development Agenda: reducing children's exposure can have enormous benefits due to avoided disease, reduced mortality and improved well-being. Reducing air pollution can also improve health and well-being by slowing climate change. It is estimated that, by 2030, climate change will be responsible for 250 000 deaths each year *(8)*. As many of the same pollutants that threaten health, such as black carbon and ozone (O_3), are also important agents of atmospheric warming, interventions that reduce their emissions are likely to result in benefits for both children's health and the climate.

We must seize this opportunity to create healthy, sustainable environments for our children. Everyone has a role to play, at every level: individuals, families, paediatricians, family doctors, nurses, obstetricians and gynaecologists, primary health care providers and other community workers, communities, medical students, national governments and international agencies. Their efforts should be guided by the best available evidence on the health effects of air pollution on children and on effective interventions to counter them. This document is designed to support this effort. It reports the latest scientific knowledge on the health effects of air pollution in children. The breadth and depth of the evidence make clear that air pollution is a formidable disruptor of children's health – one that deserves far greater attention from both policy-makers and health professionals. As children experience the consequences of air pollution in special, specific ways, they deserve to be assessed in a special way. This publication provides practical, reliable information for health professionals, paediatricians and other clinicians in all countries. It will be a useful reference for action: a compendium of the accumulating evidence on the links between air pollution and children's health and a source of guidance for health care providers in their clinical practice and in their collective communication of risks and solutions to the public and to policy-makers.

Children are society's future. But they are also its most vulnerable members. The immense threat posed to their health by air pollution demands that health professionals respond with focused, urgent action. Although more rigorous research into how air pollution affects children's health will continue to be valuable, there is already ample evidence to justify strong, swift action to prevent the damage it clearly produces. Health professionals must come together to address this threat as a priority, through collective, coordinated efforts. For the millions of children exposed to polluted air every day, there is little time to waste and so much to be gained.