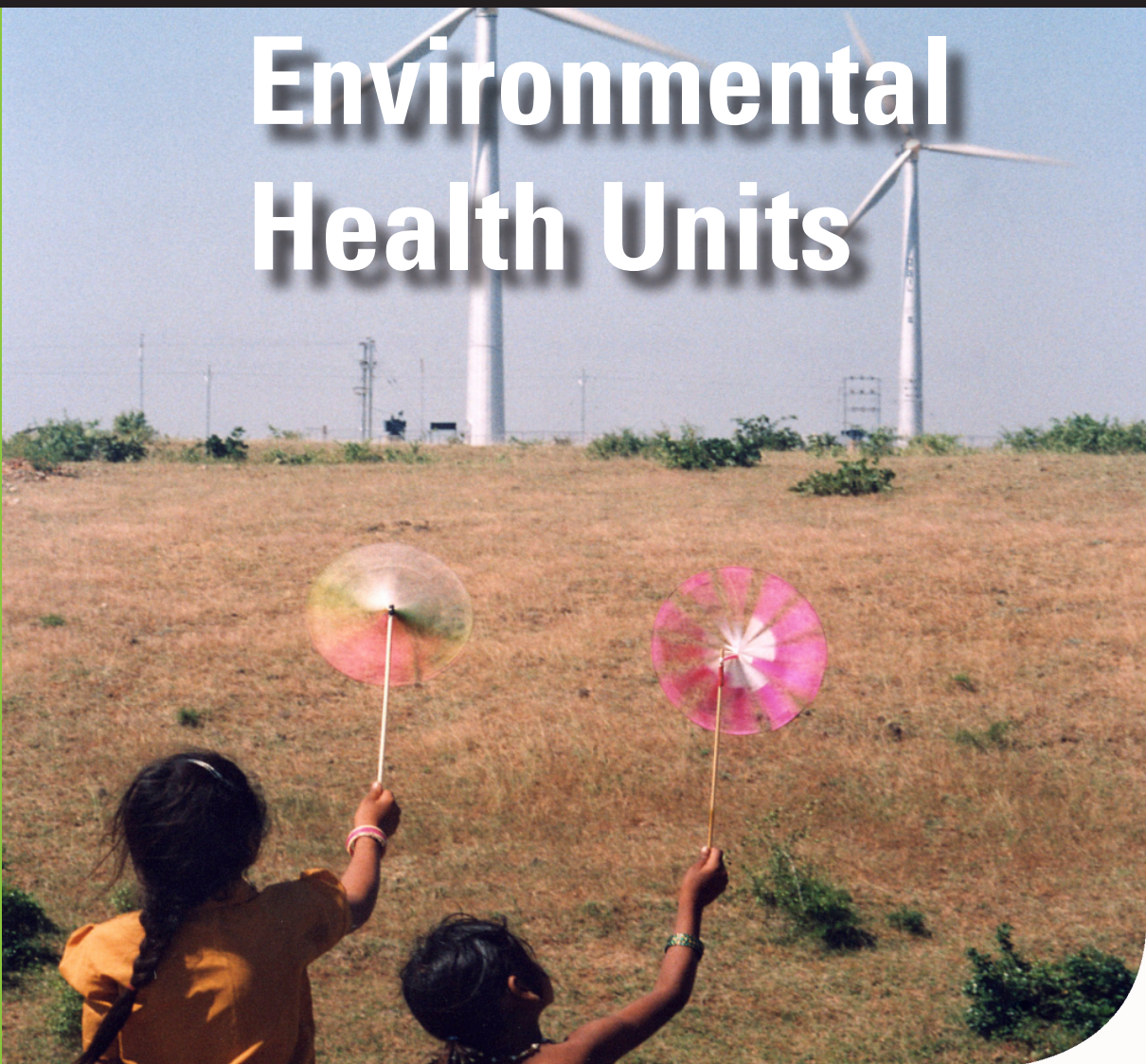


Children's

Environmental Health Units



**World Health
Organization**

Children's Environmental Health Units



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Organization**

WHO Library Cataloguing-in-Publication Data

Children's environmental health units.

1.Child welfare. 2.Environmental exposure - prevention and control. 3.Health personnel - education. 4.Child health services. I.World Health Organization.

ISBN 978 92 4 150042 5

(NLM classification: WA 320)

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Printed by the WHO Document Production Services, Geneva, Switzerland.

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BACKGROUND AND PURPOSE

Background

Health care providers are well placed to detect, treat, and prevent environmentally-related diseases and health conditions. Few mechanisms and structures are in place to enhance the recognition of environmental influences on human health, serve as repositories and sources of information for those concerned about children's health and the environment, and promote action towards healthier and safer environments for children of today and adults of the future.

For health professionals to effectively protect children from environmental threats, specialized training is useful. Evidence shows that health providers are generally not provided the training that they need to address the complex environmental health issues with respect to air, water, soil, and products (Pope & Rall, 1995). Diarrhoeal diseases often recur frequently when underlying causes such as contaminated water are not taken into account by the health provider, understood by the community or adequately addressed by governments. The complexity of children's environmental health (CEH) issues is compounded by the combination of legacy environmental issues, such as water quality and sanitation service delivery, with modern challenges such as transboundary contamination by persistent toxic substances, ozone depletion and hence ultraviolet and ionising radiation, global climate change, and exposure to endocrine-disrupting chemicals). For children in developing countries, the presence of all such risks represent a 'triple burden of disease' – a high level of communicable diseases, the increasingly severe burden of non-communicable diseases, and emerging risks from new diseases and additional stressors from the social and physical environment.

Definition of a Children's Environmental Health Unit

A Children's Environmental Health Unit (CEHU) is a centre that advances the ongoing training of health care providers, the ongoing education of the public and other sectors concerned about CEH on the protection of children from environmental threats, the management of children with known or suspected exposure to environmental stressors, and the diagnosis, management, and treatment of children with illnesses that are derived from environmental stressors.

Purpose of this Document

This document provides an introduction to Children’s Environmental Health Units (CEHUs). It is intended for governmental officials, health professionals, public health officers, environmental officers, decision-makers, community groups, non-governmental organizations and other stakeholders interested in improving children’s environmental health. It offers an overview of the services CEHUs may provide to children, parents, the wider community, paediatricians, health professionals and governmental officials involved in health or environmental programs to enable them to effectively and cooperatively address environmentally-related exposures and diseases. Because this document is designed to serve the needs of local health agencies in different societies with different resource availability, it may need to be customized in order to reflect local needs and access to resources. This document does not provide statutory requirements.

The materials presented do not represent official WHO recommendations and are based on a compilation of experiences since 1997 from the first CEHUs in North America where the model originated, known as the “Pediatric Environmental Health Specialty Unit” (PEHSU) network, and from similar ventures being developed in South America (Wilborne-Davis, Kirkland & Mulloy, 2007; Paulson et al., 2009), in Europe (Ortega-García et al., 2005), and in the Republic of Korea (Oh & Lee, 2009). Although most of these CEHUs are located in industrialized countries that have fewer challenges than less industrialized countries from water and sanitation, food safety, and vector-borne diseases, the model of providing education and consultation can readily be adapted to fit the environmental issues present in any country.

Children and the Environment

Children's environmental health merits special attention because children are disproportionately exposed and vulnerable to a range of environmental hazards. Children's exposures to environmental health hazards occur in many different settings: in the home, in the playground, at school, and in the wider environment (Chaudhuri & Fruchtengarten, 2005). Their exposures to toxicants in food, air, water, and soil are greater than that of adults, because they ingest more food and water and breathe more air in relation to body weight than adults do; they also engage in frequent hand-to-mouth behaviours and live and play close to the ground, where contaminants may be present (American Academy of Pediatrics, 2003; Landrigan & Garg, 2005). Once exposed, they are more vulnerable to toxicants' effects, because their immature metabolic pathways are less able to metabolize, detoxify, and excrete harmful substances (American Academy of Pediatrics, 2003; Landrigan & Garg 2005). Environmental hazards can easily disrupt children's rapid growth and development (Tellerias & Paris, 2008). Development of organ systems in foetuses and infants is of particular concern, since they change rapidly and cannot be easily repaired once damaged by environmental toxicants (American Academy of Pediatrics, 2003; Landrigan & Garg, 2005). Direct and indirect effects of childhood environmental exposures often persist throughout adults' lives (Gluckman et al., 2005a; Gluckman et al., 2005b; Gluckman et al., 2008).

Environmental hazards include bacteria and parasites, such as those causing cholera and malaria; neurotoxicants such as lead and mercury; air pollutants such as second-hand smoke and volatile organic compounds, and natural toxins such as aflatoxins, in addition to physical hazards

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