

TRAINING FOR HEALTH CARE PROVIDERS

[Date ...Place ...Event...Sponsor...Organizer]

CHILDHOOD RESPIRATORY DISEASES LINKED TO THE ENVIRONMENT



World Health
Organization

Children's Health and the Environment

WHO Training Package for the Health Sector

World Health Organization

www.who.int/ceh

WHO/HSE/PHE/AMR/09.01.02

1

<<NOTE TO USER: Please add details of the date, time, place and sponsorship of the meeting for which you are using this presentation in the space indicated.>>

<<NOTE TO USER: This is a large set of slides from which the presenter should select the most relevant ones to use in a specific presentation. These slides cover many facets of the problem. Present only those slides that apply most directly to the local situation in the region.>>

This slide set discusses childhood respiratory diseases that have been linked to the environment.

Childhood Respiratory Diseases & the Environment

LEARNING OBJECTIVES

- ❖ To understand how the respiratory tract is affected by the environment
- ❖ To describe respiratory diseases linked to the environment
- ❖ To list one population-level intervention and one personal-level intervention for decreasing risk of respiratory diseases

2

The objectives of this presentation are:

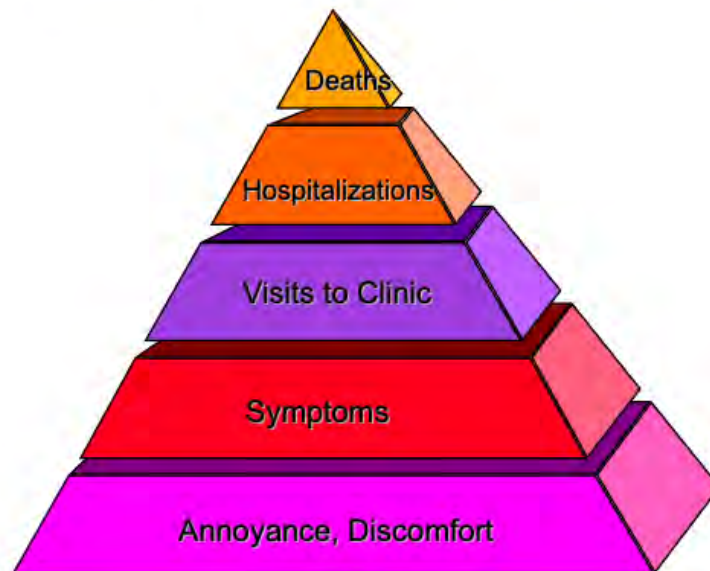
- To understand how the respiratory tract is affected by the environment
- To describe respiratory diseases linked to the environment
- To list one population-level intervention and one personal-level intervention for decreasing risk of respiratory disease

The presenter should note that people are exposed to air pollution both indoors and outdoors, and it is a combination of both exposures that can precipitate respiratory illness.

Clinicians should understand that many interventions are available. Some interventions need to occur at the population level (such as setting air pollution standards or formulating transportation policy). Other interventions may occur at the individual level (such as changes in diet and home environment). Pediatricians have a role to play in assuring that BOTH types of interventions are undertaken.

Childhood Respiratory Diseases & the Environment

ADVERSE HEALTH EFFECTS



3

This slide shows that there are a variety of ways that the respiratory tract can be affected by the environment.

The adverse health effects of air pollution are often pictured as a pyramid, like the one shown here. At the top is death, the most severe consequence of exposure (for example, the deaths that occurred during the London Fog of 1952, when about 4000 persons died). Shown slightly lower on the pyramid are hospitalizations, for example, pneumonia or asthma hospitalizations in children following very high ozone exposures. Somewhat less severe health effects include visits to the clinic for cough after exposure to open burning of waste, which can result in a high level of particulate matter. At the low end of the pyramid are the adverse effects that people suffer for which they do not seek care.

Reference:

•Samet, Defining an adverse respiratory health effect, *American Review Respiratory Disease*, 1985, 131 (4):487.

ADVERSE RESPIRATORY EFFECTS

- ❖ Upper respiratory infection
- ❖ Otitis media with effusion
- ❖ Tuberculosis
- ❖ Acute pulmonary haemorrhage
- ❖ Pneumonia
- ❖ Bronchiectasis
- ❖ Sudden infant death syndrome
- ❖ Changes in lung function
- ❖ Asthma / bronchospasm / allergies

Use of biomass and solid fuels for household cooking and heating is associated with increases in acute respiratory infections – the leading cause of death in the world today.

Indoor air pollution with environmental tobacco smoke is linked to acute otitis media.

Outdoor exposure to ozone is linked to bronchospasm and asthma attacks in some children.

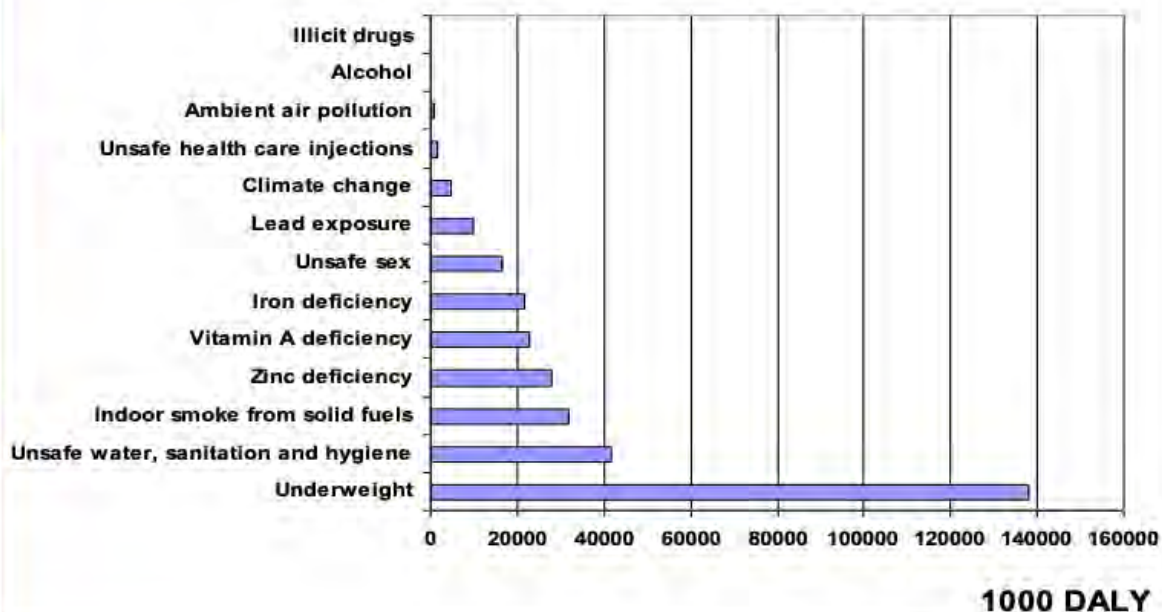
Exposure to indoor molds is associated with acute pulmonary hemorrhage among infants.

High exposure to particulate and secondhand smoke is associated with sudden infant death syndrome (SIDS).

When we think of respiratory illness and air pollution, most people immediately think of pneumonia or asthma. Speaker should note that there are a variety of other endpoints.

Childhood Respiratory Diseases & the Environment

Attributable burden of disease 0-4 years



World Health Report, 2002, www.who.int/whr/2002/en/

Every year, almost 11 million children die before the age of 5. Many of these deaths are preventable.

There are many problems facing children, and this slide shows that environmental health problems contribute to the “burden of disease” in children under 5 years.

DALY stands for “disability adjusted life years” and is a common measurement unit for morbidity and mortality. DALYs reflect the total amount of healthy life lost, to all causes, whether from premature mortality or from some degree of disability during a period of time. The attractiveness of this measurement lies in the fact that it combines information about morbidity and mortality in a single number. DALYs allow the losses due to disability and the losses due to premature death to be expressed in the same unit.

According to the World Health Report (2002), the biggest contributor to poor health in the world's children is underweight. The second most important contributor is unsafe water, sanitation and hygiene, and the third most important contributor is indoor smoke from solid fuels. As you can see, in 2002 ambient (outdoor) air pollution contributed far less to poor health in young children. This is not to say that it is not important. But its influence on young children's health is comparatively less than that of indoor air pollution because young children spend most of their time indoors where levels of air pollution can be much higher than levels outdoors.

Reference:

- WHO. World Health Report, 2002, available at www.who.int/whr/2002/en/ -

accessed December 2009

Childhood Respiratory Diseases & the Environment

LEADING CAUSE OF DEATH IN CHILDREN

Despite extraordinary advances in the 20th century,

2000: 10.9 million deaths in children under 5 years (Murray, *The Global Burden of Disease 2000 Project*, WHO, 2001)

1990: 12.7 million

Black, *Lancet* (2003) 361: 2226
www.unicef.org/sowc02summary/table8.html

Causes & estimated number of deaths/yr in children 0 - 4 yrs

Acute respiratory infections:	2.000.000
Diarrhoeal diseases:	1.300.000
Malaria & other vector-borne:	1.000.000

In older children (0-14 y.o.)

Injuries (non-intentional)	700.000
Poisonings	50.000

World Health Report, 2001; www.who.int/whr2001/index.htm

WHO has identified acute respiratory infections as the leading cause of death in children under 5 years of age.

References:

- Black, Where and why are 10 million children dying every year? *Lancet*. 2003. 361: 2226
- Murray, The Global Burden of Disease 2000 Project: aims, methods and data sources. Global Program on Evidence for Health Policy Discussion Paper No. 36. WHO, 2001.
- UNICEF. The state of the world' s children 2002: leadership: the rate of progress. Available at www.unicef.org/sowc02summary/table8.html – accessed December 2009
- World Health Report, 2001. Available at www.who.int/whr2001/index.htm – accessed December 2009

Childhood Respiratory Diseases & the Environment

CHALLENGES TO CHILDREN'S HEALTH & DEVELOPMENT:

The Double - or Triple - Burden of Disease

EMERGING EPIDEMICS OF NON-COMMUNICABLE DISEASES

"NEW" THREATS

Asthma, Injuries,
Traffic effects,
Neurodevelopmental,
learning &
behavioural disorders
Cancer
Endocrine disruption



WHO

PERSISTENT PROBLEMS

"THE UNFINISHED AGENDA"

Infectious diseases in low
income countries:

ARI
Malaria
Measles
Diarrhoea
HIV/AIDS...



Children living in developing countries suffer a double or even triple burden of disease. This refers to the exposures, morbidity and mortality from diseases associated with low levels of development such as ARI and diarrhea, as well as newer threats associated with industrialization such as asthma and allergies. When children have both kinds of exposures and are poor and malnourished it represents a triple burden. These concepts are important for understanding the context of respiratory illness associated with pollution. Note that respiratory diseases lead the list in both emerging and persistent problems.

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_29161

