

WHO Public Health & Environment Global Strategy Overview 2011

I. Focus on Primary Prevention

Environmental hazards influence over 80% of the communicable and noncommunicable diseases and injuries monitored by WHO. Overall, environmental hazards are responsible for about one-fourth of the total burden of disease worldwide. In developing countries, the burden of disease due to environmental hazards is heavily weighted towards communicable diseases. In developed countries, environmental hazards have a bigger impact on noncommunicable diseases.

Public Health and Environment (PHE) PHE 's role is to promote a healthier environment by influencing public policies to address the root causes of environmental threats to health and intensifying primary prevention. PHE influences policy by producing evidence-based risk assessments, formulating updated norms and guidance on major environmental hazards to health and creating guidance, tools and initiatives to facilitate healthy policy decision-making in high environmental hazard sectors.

PHE's strategic priority is avoiding and eliminating unnecessary illness, injury and death through primary prevention of environmental hazards. PHE's focus is on population-wide, proactive, upstream preventive actions before unhealthy conditions and their costs occur. Such actions include eliminating lead in paint, stopping the use of asbestos, eliminating mercury in medical measuring devices and reducing indoor air pollution.

Focusing on primary prevention makes great sense as unhealthy conditions and their associated costs can be avoided. Unfortunately, the best available estimate is that today less than 5% of world-wide spending on health is allocated to prevention. The good news is that returns on investment in prevention can be extremely high - primary prevention of environmental hazards delivers great value for money with impacts on health and the economy that go well beyond the immediate reduction in incidence or severity of disease.

In the area of climate change for example, good preventive policies needed to meet greenhouse gas emissions targets can significantly and favourably impact heart disease and respiratory illness. A shift to sustainable urban transport could cut heart disease by 10-25%. Improved stoves reducing indoor air pollution could save millions of lives in India alone.

In a broader economic and fiscal policy context, rapidly rising health-care expenditures are not yielding commensurate improvements in health. From 1997 to 2007, total health expenditure world-wide as a share of GDP rose at a compound annual rate of 1.28%. On a per capita basis, total expenditure on health has grown world-wide at or above 6% per year from 2000 to 2008 while gains in life expectancy gains have been below 0.6% per year.

By 2008, 23 countries across the world had health expenditures of at least 10% of GDP. Continuing at the same growth rate going forward, in ten years time these same 23 countries expenditure on health would be close to 15% of GDP on average, with real questions as to sustainability.

Treatment of chronic conditions is a major factor in rising expenditure on health. Medicare data from the United States for example, shows 10 chronic conditions accounted for 51% of the growth in spending from 1997 – 2006. Environmental risk factors are known to contribute significantly (above 10%) in half of these conditions. The rising impact of chronic conditions is an issue in every region of the world, led by Western Pacific and South-East Asia.

From both an economic and ethical perspective, focusing on primary prevention of environmental risk factors is good policy. By focusing on reducing environmental risk factors, nearly a quarter of the burden of disease could be prevented, helping ensure the sustainability of health expenditures.

II. Major Areas of Work

PHE is focused on developing and advocating effective policies to prevent environmental risks to human health based on improved scientific understanding. Policies for a healthy environment involve considerations across a multitude of issues and sectors. Some examples:

- Water, sanitation & hygiene guidelines to inform policy making and prevent waterborne diseases
- Indoor air policies to substitute fuels & cook stoves
- Outdoor air policies to minimize the health impact of urban transport
- Housing standards and policies to reduce exposure to radon, lead, asbestos and other harmful chemicals
- Chemical regulation policies to restrict or stop the use of highly hazardous chemicals in industry, agriculture and in consumer products and promote the use of safer alternatives

Many of the environmental risk factors PHE works on are increasing in importance. Continued increases in urbanization are driving greater exposure to/increasing the intensity of air quality, water, and waste-related risks. Rising employment in the informal sector is exposing more and more people to occupational hazards. Continued growth of the chemicals industry (especially in lower- and middle-income countries) without a corresponding development of policies and infrastructure for safe chemicals management is increasing the risk of chemical exposure and ill-health. At the same time, a better understanding of chemicals risks is

expanding the scope for safe chemicals management policies and infrastructure. Rising oil prices and efforts to improve energy efficiency have potentially perverse effects – e.g. higher exposure to radon gas in energy-efficient homes, and to increased particulates from a switch to diesel engines. Sustained dependence on fossil fuels, coupled with social unrest in oil-producing countries, has resulted in greater engagement in more technologically challenging and more environmentally sensitive resource extraction activities (e.g. oil sands in Canada, deeper off-shore oil drilling in Brazil). Finally, climate change is exacerbating a whole range of risks.

PHE provides assistance and guidance in responding to environmental emergencies around the world. In 2010 alone, PHE was involved in chemical mud spills in Hungary, heavy metal poisoning in Nigeria, mitigating health effects of wildfires in Russia and in helping to address water & sanitation crises following the earthquake in Haiti.

At the heart of PHE's work is assessing environmental and occupational risks and defining health and safety standards to reduce exposure; working broadly across regulatory and legislative processes to promote policies delivering health co-benefits and avoidance of health risks; and where appropriate, focusing efforts on specific settings such as extractive industries or vulnerable population groups such as children to better address particular areas of elevated risk.

PHE's ability to have an impact depends on maintaining a balance of strong scientific and policy capabilities as well as emergency response capacity across a number of technical areas such as Water, Sanitation and Hygiene, Chemicals Management, Radiation Protection, Occupational Health, Climate & Environmental Science, and Air Quality.

Water, Sanitation and Hygiene: PHE's focus is on reducing water- and waste-related disease and optimizing the health benefits of sustainable water and waste management. PHE has long history of successful global leadership in this area and has played a key role in setting water-quality standards. In the area of Water, Sanitation and Hygiene, in addition to focusing on millennium development goals (MDGs), the major areas of work include:

- Supporting health sector actions and building capacity in non-health sectors that control or influence the delivery of safe drinking water and adequate sanitation and hygiene
- Refocusing on primary prevention through water and sanitation networks of practitioners and policy makers
- Setting water-quality guidelines and disseminating best practices
- Monitoring progress with respect to water and sanitation-related MDGs (JMP)
- Analysis of water and sanitation country priorities and budgets, human and institutional capacities, and stakeholder coordination (GLASS)
- Health impact assessments of water resources, particularly to reduce vector-borne disease transmission
- Cholera – surveillance/emergency
- Water and sanitation in health-care facilities
- Economics – benefits, burden of disease
- Emergencies

PHE's key achievements targeted for 2015 in Water, Sanitation and Hygiene are to contribute to and monitor the following:

- ***At least 88 % of population with access to improved drinking water***
- ***At least 77 % of population with access to improved sanitation***
- ***Preventive risk management policies (water safety plans) and practice established in 12 countries in Asia, 6 in Latin America, and 4 in Africa***
- ***Scaled up implementation of interim household water safety solutions in 30 countries***
- ***Waste-water reuse safety guidelines for agricultural use in place in 3 pilot countries***

In terms of communications, PHE's key messages regarding Water, Sanitation and Hygiene are:

- Unsafe water and sanitation and poor hygiene are responsible for the deaths of approximately 2.5 million people annually, mostly children under the age of five, particularly as a result of diarrhoeal disease.
- An estimated 2.6 billion people lack access to adequate sanitation globally. If the current trend continues, by 2015 there will be 2.7 billion people without access to basic sanitation. The regions with the lowest coverage are sub-Saharan Africa (31%), southern Asia (36%) and Oceania (53%). Underlying issues that add to the challenge in many countries include a weak infrastructure, an inadequate human resource base and scarce resources to improve the situation. Access to water and sanitation is a human right and a key component of primary prevention to ensure better health.

Chemicals Management: A second major area of long-standing focus is chemicals management where PHE works to reduce the risks and burden of disease from chemical exposures. PHE chemical safety guidelines are the internationally-recognized reference point in the field. Major areas of work include:

- Risk assessment of priority chemicals and setting WHO guidelines
- Tools for chemicals risk assessment and building country capacities
- Strategic Approach to International Chemicals Management (SAICM)
- Global alliance to eliminate lead paints
- Global initiative to substitute mercury-based medical measuring devices in health care
- Establishment and strengthening of poisons centres
- Chemical emergency response

PHE's key achievements targeted for 2015 in Chemicals Management are:

- ***World-wide network of regional/national poison centres in place***
- ***Lead out of paint***
- ***Mercury out of medical measuring devices***
- ***New lead guidelines***
- ***Active health sector engagement in the sound management of chemicals***

In terms of communications, PHE's key messages regarding Chemicals Management are:

- The potential public health risks posed by chemicals are well known. Yet the production and use of chemicals continues to increase worldwide, with the global output of chemicals having increased approximately ten-fold between 1970 and 2010. WHO estimates that more than 25 per cent of the global burden of disease is linked to environmental factors, including exposures to toxic chemicals. For example, exposure to lead accounts for three per cent of the cerebrovascular disease burden and two per cent of the ischaemic heart disease burden. In addition, some nine per cent of the global burden of lung cancer is attributable to occupational exposure to toxic substances.

Radiation Protection: PHE works to reduce the risks and burden of disease resulting from ionizing and non-ionizing radiation. PHE has been a scientific reference point during and after radiation emergencies such as Chernobyl and Fukushima. In addition, PHE publications have had an important influence on radon and sun bed regulation. Major areas of work include:

- Global initiative to optimize radiation exposure in health-care settings
- Chernobyl – communication with affected communities
- International regulation and standards
- Prevention of radon risks
- Assessing and updating health risks from electromagnetic fields
- Promoting prevention policies for UV radiation
- Radiation emergencies preparedness and response (IHR)

PHE's key achievements targeted for 2015 in Radiation are:

- **Radon standards in place in new building codes & related regulations**
- **Radiation safety standards implemented in health-care settings**
- **Preventive risk management policies established in countries where sunbeds are used**
- **Electromagnetic radiation exposure limits adopted by Member States**

In terms of communications, PHE's key messages regarding Radiation are:

- Ionizing radiation: causes leukaemia, thyroid and breast cancer and many other malignant diseases, as well as cataracts. In high doses, radiation can cause severe skin and tissue damage as well as acute radiation syndrome and death.
- UV radiation: short-term effects include sunburn, impacts on the immune system, eye inflammation; long-term effects include skin cancer, skin ageing and cataracts.

Climate Change: Climate Change is a comparatively recent area of focus for PHE. PHE's efforts are geared to ensuring that health considerations are central to climate-change mitigation and adaptation strategies. PHE advocates for health action which can save lives now and protect from future climate change. Major areas of work include:

- Protecting health from climate risks: Policy, technical and project support to strengthen public health protection from climate-sensitive diseases.
- Guiding "healthy mitigation": Providing assessments and guidance on how to improve health while cutting carbon emissions in key sectors, such as agriculture, household energy production and transport.
- Supporting health-sector leadership: New initiatives on "Green and safe hospitals," and improving environmental performance of national health services - and WHO itself.

PHE's key achievements targeted for 2015 in Climate Change are:

- **Health issues established as a full part of climate-change agenda**
- **Health interventions established as priority for climate-change adaptation**
- **Climate-change mitigation actions also targeting health co-benefits**

In terms of communications, PHE's key messages regarding Climate Change are:

- Climate-change health impacts, including deaths and injuries from more extreme weather events such as flooding and droughts, and changed patterns of vector-borne disease and other disease transmission, which are responsible for an estimated 150 000 deaths annually.

Air Quality: PHE is building a new and important capability focused on improving indoor and urban outdoor air quality to reduce the burden of respiratory and other disease. Major areas of work include:

- An essential intervention package to protect child health, by providing information on the effectiveness of indoor air pollution (IAP) interventions (that can half child pneumonia, the largest cause of death in under 5s).
- A global solid-fuel use database monitoring global progress in household energy use and modeling expected health impacts from interventions.
- The Global Cookstove Alliance to obtain health gains from deployment of 100 million clean cookstoves.
- Tools for cities to assess the health impacts of transport policies before and after interventions and models to estimate expected impacts, with case studies.

- PHE's key achievements targeted for 2015 in Air Quality are:

- **100 million families with improved clean cookstoves.**
- **Including indoor air pollution interventions in the essential package for managing childhood illnesses.**

In terms of communications, PHE's key messages regarding Air Quality are:

- Air pollution continues to pose a significant threat to health worldwide. According to a WHO assessment of the burden of disease due to air pollution, more than 2 million premature deaths each year can be attributed to the effects of urban outdoor air pollution and indoor air pollution (caused by the burning of solid fuels). More than half of this disease burden is borne by the populations of developing countries. Clean air is a basic requirement for human health and well-being.

- Indoor smoke from solid fuels is responsible for the deaths of approximately 1.6 million people annually, including nearly one million children under the age of five, largely as a result of respiratory diseases.
- Urban air pollution generated by vehicles, industries and energy production is responsible for the deaths of approximately 800 000 people annually.
- By reducing particulate matter pollution from 70 to 20 micrograms per cubic metre as set out in new *WHO Air Quality Guidelines*, it is estimated that air quality-related deaths can be cut by around 15%, and by reducing air pollution levels, countries can reduce the global burden of disease from respiratory infections, heart disease, and lung cancer.

Occupational Health: In occupational settings, PHE works to provide all workers with essential interventions and basic health services to prevent occupational and work-related diseases and injuries. Major areas of work include:

- Integrating occupational health activities into primary health care – supporting countries to provide basic services for prevention of occupational health risks, particularly in high-risk under-served settings.
- Protecting the health and safety of health-care workers – developing national programmes and improving access to services including immunization, HIV and TB prevention treatment and care.
- Mobilizing enterprises and worksites to create healthy workplaces – providing guidance, good practices, tools and incentives to protect and promote health at the workplace.

PHE's key achievements targeted for 2015 in Occupational Health are:

- ***Essential interventions and basic services to prevent occupational diseases and injuries integrated into primary health care - over 15 countries in process***
- ***Scale-up protection and promotion of health in high-risk work settings – healthcare, agriculture and informal economy***

In terms of communications, PHE's key messages regarding Occupational Health are:

- Currently about 125 million people in the world are exposed to asbestos at the workplace. According to WHO estimates, more than 107,000 people die each year from asbestos-related lung cancer, mesothelioma and asbestosis resulting from occupational exposures. One in every three deaths from occupational cancer is estimated to be caused by asbestos. In addition, several thousands of deaths can be attributed annually to exposure to asbestos in the living environment.
- Worldwide, cancer is the second leading cause of death. In 2008, there were 7.6 million deaths from cancer, alongside 12.7 million new cases. Roughly 19 per cent of all cancers are estimated to be attributable to the environment, including work settings. Environmental and occupational interventions are therefore vital to reduce cancer incidence. Decreasing exposure to carcinogens can be cost-effective and contributes to the overall well-being of communities.
- Various occupational risks result from noise (hearing loss), carcinogens (cancers), needlestick injuries (transmission of HIV/AIDS and hepatitis), airborne particulates (asthma), silicosis and

asbestosis, ergonomic stressors (lower back pain), and psychological factors causing occupational stress.

- Infections arise from a poor environment in health-care settings: Legionella, Hepatitis B virus (HBV), and Hepatitis C virus (HCV).

Children's Environmental Health (CEH): CEH works to reduce the risks to and burden of disease in children from environmental hazards.

Major areas of work include:

- Coordination and, harmonization of birth cohort studies of environmental hazards to children;
- Provision of expert advice to Member States on incorporating surveillance and prevention of developmental diseases caused by chemicals into their national health systems.

PHE's key achievements targeted for 2015 in CEH are:

- *Harmonized methods for measuring core environmental exposures and bio-markers adopted by four countries launching new birth cohort studies*
- *Model program for prevention and surveillance of childhood kerosene poisoning completed*
- *Method for the assessment of health effects from e-waste completed*

In terms of communications, PHE's key messages regarding Children's Environmental Health are:

- Children's ability to develop and become productive adults is largely determined by their health and education.
- Environmental factors are important determinants of child health. Healthier environments will have a prompt and demonstrable impact on children's well-being, on poverty reduction and, in the longer term, on the achievement of the Millennium Development Goals.

High Environmental Impact Economic Sectors: Focus on priority economic sectors, e.g. extractive industries and large infrastructure developments (e.g. urban transport, dams). PHE works with national governments to provide information about healthy policy options in these sectors and to help put in place health management systems to anticipate and address sector-related impacts on public health. Major areas of work include:

- Integration of health considerations in high-level planning processes for natural resources development, for example using tools like health impact assessment or strategic environmental assessment.
- Development of monitoring and evaluation frameworks to measure the health "performance" of policies and investments in extractive industries, so as to provide a measure of the social benefits/losses generated by those investments.
- Leveraging private sector investments, through work with the multilateral and regional development banks (e.g. World Bank's International Finance Corporation) to include health as a key performance criterion for investments in natural resource extraction and large

infrastructure development projects.

- Supporting municipal planning authorities and stakeholders in defining policy options for urban renewal - including transport and housing - that generate the best health outcomes; to monitor and evaluate the health performance of transport and housing interventions, and the extent to which those interventions have contributed to the city's well-being.

PHE's key achievements targeted for 2015 related to its work on health with sectors are:

- ***A model for including health in extractive industry planning, and for monitoring evaluating and reporting the health results tested in different WHO regions.***
- ***Health as a criterion for the evaluation of the "performance" of investments made in high environmental impact sectors, including for example urban transport, oil and gas extraction.***

In terms of communications, PHE's key messages regarding its work on High Environmental Impact Sectors are:

- According to the WHO Commission on Social Determinants of Health, 27 billion USD in Development Assistance for Health (DAH) is needed per year to meet basic life-saving needs. In 2005, total DAH amounted to 9.5 billion or 35% of the total estimated need. Expanded primary prevention activities can be both a means of improving the cost effectiveness of DAH and a means of tapping alternative sources of financing.
- Many of the factors contributing to the environmental burden of disease burden are driven by policies and activities in economic sectors. The greatest return on investments in primary prevention of disease will occur only when public health measures are targeted at the sources and sectors from which these threats to health emanate.
- There is huge potential for health to be had through a greater alignment of health interests with high environmental impact sectors. First, because the scale of resources invested (e.g. through foreign direct investment activities) in these sectors, such as natural resource extraction, dwarfs investments in health systems in many countries. Second, it is in the direct interest of industry operators and governments to promote and protect the health of communities "hosting" large-scale development projects/activities.

III. Communications

PHE, in its international health authority role, is uniquely positioned to raise awareness of the critical importance of environment and health at all levels and to identify ways to coordinate environment and health communications from different agencies, sectors and regions and enable independent, scientifically-sound and ethically-informed information to stand out in the health information market place.

PHE's experience over the recent past has led to a number of key lessons and points of reference for future communications:

- WHO's work on environmental health provides the basis for global standards in environmental quality and an effective investment for public health (e.g. air quality and drinking-water quality guidelines).

- Tackling environmental health risks can additionally yield many gender- and equity-related benefits in terms of women spending less time fetching fuel or improved attendance rates for girls at school.
- Benefits from environmental health improvements are enjoyed by rich and poor, in developed and developing countries, lowering health costs and lessening conflict over environmental resources.
- Environmental health issues are key reasons for persuading non-health sectors to consider the public health implications of their policies, not least because of existing requirements worldwide for taking environmental impacts into consideration when policies and investments are defined.
- Communicating about environmental health facilitates understanding of the complex links between economic and social development, environment and ecosystems, and thereby enables key indicators to be defined for assessing progress towards sustainable development.
- The working environment is an entry point for health services, particularly in low-income areas where it is often the only point of contact with those services.
- About half the world's population works, and the workplace is the setting for not only reducing occupational risks, but also tackling determinants of health and establishing cooperation with non-health sectors.

The influence of modern media is increasing inexorably as a determinant of health through the formation of public perceptions, choices, behaviors and policy options. While environment and health issues have been receiving increased attention in political, economic, security and development debates, this attention has yet to be converted to the levels of investment PHE believes are justified, bearing in mind the fact that roughly one quarter of the global disease burden and one third of that in developing countries could be reduced through available environmental health interventions and strategies.

PHE's general communication targets and objectives are as follows:

Governmental policy- and decision-makers: Raise policy maker health literacy about health impacts of all policies, advocate for their support and work with different sectoral communicators to cooperatively address and influence behaviours of other audiences.

Donors: Communicate the importance of and kinds of responses/changes that can be realized from investment in environment and health actions with their funding and support.

Professionals in health, education, and other sectors: Help professionals to understand the roles they can play as service providers, educators, promoters and advocates and implementers of good environment and health behaviours and policies at international , regional, national and local levels.

Media: Engage with media as partners and intermediaries to disseminate messages to larger audiences.

Private sector: Explore partnerships with firms with similar interests who have global communication capacities for social marketing, advocacy and awareness raising.

Partner Agencies: Cooperative communication activities around World Health Days, campaigns, network building issues of mutual interest.

IV. Advocacy Initiatives

One of PHE's key roles is in advocacy. Much of PHE's advocacy efforts are driven by a series of time-limited initiatives which target policy-makers in specific sectors and regions. These initiatives include the 2008 Libreville Declaration and the establishment of a Health and Environment Strategic Alliance in Africa. Fifty-two African governments committed to the establishment of National Plans of Joint Action (NPJAs) to protect health and preserve ecosystems. Already, 18 countries have completed or near completed Situation Analyses and Needs Assessments (SANAs) as a basis for those NPJAs. Further initiatives include:

- Air Quality & Health
- Indoor Air Pollution / “Global Cookstove Alliance”
- Outdoor Air – Urban Transport
- “Greening” the Health Services
- Health in the Green Economy
- Linking Environmental Health to Non-Communicable Diseases Agenda
- 10 Chemicals of Major Public Health Concern

V. PHE Operational Efficiency

Operationally, PHE's efforts are driven by five guiding approaches to using resources efficiently:

- Expand collaboration with priority, highly-influential social/professional/issue networks
- Redouble efforts to link to regional operations and leverage local resources for global objectives
- Proactively manage continued investment/participation in legacy relationships/mandates
- Reinforce communication and collaboration across areas of work by instituting a more formal, managed project coordination process
- Selectively strengthen, professionalize and achieve minimum scale in high-leverage capabilities supporting PHE-wide initiatives (communications, data management & analysis, quantification of policy benefits).

* * *