

# WHO-Facts Sheet

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Compiled and edited by  
Babichan K Chandy

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## 1. NEW COUNTRY ESTIMATES SHOW HEAVY TOLL CAUSED BY INDOOR AIR POLLUTION

In the 21 worst-affected countries, close to 5% of death and disease is caused by indoor air pollution, according to new estimates published by the World Health Organization (WHO).

The first-ever country-by-country estimates of the burden of disease due to indoor air pollution highlight the heavy toll solid fuel use takes on the health and well-being of people around the world.

Among the worst affected 11 countries alone, indoor air pollution is to blame for a total of 1.2 million deaths a year. Globally, reliance on solid fuels is one of the ten most important threats to public health.

“The prevention potential is enormous” said Susanne Weber-Mosdorf, WHO’s Assistant Director-General for Sustainable Development and Healthy Environments. “Solutions are available, and it is our international responsibility to promote the health and well-being of those affected, who are mostly women and children.”

Worldwide, more than three billion people depend on solid fuels, including biomass (wood, dung and crop residues) and coal, for cooking and heating. Exposure to indoor air pollution from solid fuels has been linked to many diseases, in particular pneumonia among children and chronic respiratory diseases among adults.

A shift towards cleaner and more efficient modern fuels, such as biogas, liquefied petroleum gas (LPG) and kerosene could largely eliminate this health risk and prevent 1.5 million deaths a year globally. In the short-term, the promotion of more

fuel-efficient and cleaner technologies, such as improved cooking stoves, smoke hoods and insulated retained heat cookers, could substantially reduce indoor air pollution and would bring about many other convenience and socioeconomic benefits.

These burdens of disease estimates will assist national decision-makers in the health, environment, energy and finance sectors to set priorities for preventive action. They can also be used to assess the performance of policies over time. In the context of limited resources, burden of disease information should be complemented with knowledge on technological options in a given country and information on the costs and benefits of such options.

*For more information contact: Nada Osseiran, Advocacy & Communications Officer, Public Health and Environment, WHO, Geneva, Tel. +4122 - 7914475, Fax: +4122 791 4127. Email: osseirann@who.int.*

*Country by country information on indoor air pollution and its health impacts, available at [http://www.who.int/indoorair/health\\_impacts/burden/en/index.html](http://www.who.int/indoorair/health_impacts/burden/en/index.html)*

## 2. ROAD TRAFFIC CRASHES ARE THE LEADING CAUSE OF DEATH FOR 10-24 YEAR OLDS

**New Report marks First United Nations Global Road Safety Week**

Road traffic crashes are the leading cause of death among young people between 10 and 24

Address correspondence to:

Office of the Spokesperson, WHO, Geneva. Tel.: (+41 22) 791 2599; Fax (+41 22) 791 4858; E-mail: [inf@who.int](mailto:inf@who.int); Web site: <http://www.who.int/>

years, according to a new report published by the World Health Organization (WHO). The report, *Youth and Road Safety*, says that nearly 400,000 young people under the age of 25 are killed in road traffic crashes every year. Millions more are injured or disabled.

The vast majority of these deaths and injuries occur in low- and middle-income countries. The highest rates are found in Africa and the Middle East. Young people from economically disadvantaged backgrounds are at greatest risk in every country. Young males are at higher risk for road traffic fatalities than females in every age group under 25 years.

Unless more comprehensive global action is taken, the number of deaths and injuries is likely to rise significantly. Road traffic collisions cost an estimated \$518 billion globally in material, health and other costs. For many low- and middle-income countries, the cost of road crashes represents between 1-1.5% of GNP and in some cases exceed the total amount they receive in international development aid.

*Youth and Road Safety* stresses that the bulk of these crashes are predictable - and preventable. Many involve children playing on the street, young pedestrians, cyclists, motorcyclists, novice drivers and passengers of public transport.

The report points out that, children are not just little adults. Their height, level of maturity, their interests, as well as their need to play and travel safely to school, mean that they require special safety measures. Also, the report says, protecting older youth requires other measures such as lower blood alcohol limits for young drivers and graduated license programmes.

*Youth and Road Safety* highlights examples in countries where improved measures such as lowering speed limits, cracking down on drink-driving, promoting and enforcing the use of seat-belts, child restraints, and motorcycle helmets, as well as better road infrastructure and creating safe areas for children to play have significantly reduced the number of deaths and injuries.

“The lack of safety on our roads has become an important obstacle to health and development,” said Dr Margaret Chan, WHO Director-General. “Our children and young adults are among the most vulnerable. Road traffic crashes are not ‘accidents’. We need to challenge the notion that they are unavoidable and make room for a proactive, preventive approach. “

For more information contact: Laura Sminkey, Technical Officer, WHO, Geneva, Tel: +41 22 791 4547, Mobile: +41 79 249 3520, Email: [sminkeyl@who.int](mailto:sminkeyl@who.int).

### 3. WHO PROPOSES GLOBAL AGENDA ON TRANSPLANTATION

#### New World Observatory Launched with Spain

At the second Global Consultation on Transplantation held in March 2007, the World Health Organization (WHO) presented countries and other stakeholders with a blueprint for updated global guiding principles on cell, tissue and organ donation and transplantation.

Those principles aim to address a number of problems: the global shortage of human materials - particularly organs - for transplantation; the growing phenomenon of ‘transplant tourism’ partly caused by that shortage; quality, safety and efficacy issues related to transplantation procedures; traceability and accountability of human materials crossing borders.

Stakeholders agreed to the creation of a Global Forum on Transplantation to be spearheaded by WHO, to assist and support developing countries initiating transplantation programmes and to work towards a unified global coding system for cells, tissues and organs.

A central theme of the discussions was WHO’s concern over increasing cases of commercial exploitation of human materials.

“Human organs are not spare parts,” said Dr Howard Zucker, WHO Assistant Director-General of Health Technology and Pharmaceuticals. “No one can put a price on an organ which is going to save someone’s life.”

“Non-existent or lax laws on organ donation and transplantation encourage commercialism and transplant tourism,” said Dr Luc Noel, in charge of transplantation at WHO. “If all countries agree on a common approach, and stop commercial exploitation, then access will be more equitable and we will have fewer health tragedies.”

Transplantation is increasingly seen as the best solution to end-stage organ failure. End-stage kidney disease, for instance, can only be repaired with a kidney transplant. Without it, the patient will die or require dialysis for years, which is an expensive procedure and often out of reach of poorer patients. Transplantation is the only option for some liver conditions, such as severe cirrhosis or liver cancer, and a number of serious heart conditions.

Recent estimates communicated to WHO by 98 countries show that the most sought after organ is the kidney. Sixty-six thousand kidneys were transplanted in 2005 representing a mere 10% of the estimated need. In the same year, 21000 livers and 6000 hearts were transplanted. Both kidney and liver transplants are on the rise but demand is also increasing and remains unmatched.

Reports on 'transplant tourism' show that it makes up an estimated 10% of global transplantation practices. The phenomenon has been increasing since the mid-1990's, coinciding with greater acceptance of the therapeutic benefits of transplantation and with progress in the efficacy of the medicines - immuno-suppressants - used to prevent the body's rejection of a transplanted organ.

The principles put forward by WHO underscore that the person - whether recipient of an organ or a donor - must be the main concern both as patient and as human being; that commercial exploitation of organs denies equitable access and can be harmful to both donors and recipients; that organ donation from live donors poses numerous health risks which can be avoided by promoting donation from deceased donors; and that quality, safety, efficacy and transparency are essential if society is to reap the benefits transplantation can offer as a therapy.

"Live donations are not without risk, whether the organ is paid for or not. The donor must receive proper medical follow-up but this is often lacking when he or she is seen as a means to making a profit," added Dr Luc Noel. "Donations from deceased persons eliminate the problem of donor safety and can help reduce organ trafficking."

WHO action on transplantation will be aided by a global observatory set up in Madrid under the auspices of the Government of Spain. The observatory, which is linked to the WHO Global Knowledge Base, will provide an interface for health authorities and the general public to access data on donation and transplantation practices, legal frameworks and obstacles to equitable access.

In 2005, 66,000 kidney transplants were performed, 60% of which in industrialized countries. Seventy-five per cent of the more than 21,000 liver transplants and 6000 heart transplants were performed in industrialized and emerging economies.

*For more information contact: Daniela Bagozzi, Media Communications, Health Technology and Pharmaceuticals, WHO, Tel. +41 22 791 45 44, Mobile: +41 79 475 54 90, E-mail: bagozzid@who.int All press releases, fact sheets and other WHO media material may be found at [www.who.int](http://www.who.int).*

#### **4. GLOBAL TUBERCULOSIS EPIDEMIC LEVELLING OFF**

##### **XDR-TB, HIV/AIDS and other obstacles still thwarting progress**

The global tuberculosis (TB) epidemic has levelled off for the first time since the World Health

Organization (WHO) declared TB a public health emergency in 1993. The Global Tuberculosis Control Report released in March 2007 by WHO finds that the percentage of the world's population struck by TB peaked in 2004 and then held steady in 2005.

"We are currently seeing both the fruits of global action to control TB and the lethal nature of the disease's ongoing burden," said United Nations Secretary-General Ban Ki-moon. "Almost 60 per cent of TB cases worldwide are now detected, and out of those, the vast majority are cured. Over the past decade, 26 million patients have been placed on effective TB treatment thanks to the efforts of governments and a wide range of partners. But the disease still kills 4400 people every day."

Although the rate at which people developed TB in 2005 was level or even declined slightly compared to 2004, the actual number of TB cases continued to rise slowly. The reason for this difference is that world population is expanding. The pace at which new TB cases developed in 2005, however, was slightly lower than global population growth. The number of cases in 2005 was 8,787,000, up from 8,718,000 in 2004. An estimated 1.6 million people died of the disease in 2005, 195,000 of them people living with HIV.

Despite signs that the epidemic may be slowing, there are major impediments to rapid progress against TB - prominent among them, uneven access to diagnosis and treatment within countries. "We need to tackle this problem as part of the larger challenge of increasing access to primary health care services. All people, no matter who they are or where they live, should have access to TB diagnosis and treatment as part of a package of general health services that bring multiple health benefits," said Dr Margaret Chan, WHO Director-General.

Other major barriers to progress include:

**HIV/TB:** TB is a major cause of death among people living with HIV/AIDS, and HIV is the main reason for failure to meet TB control targets in high HIV settings, particularly sub-Saharan Africa, where HIV/AIDS is dramatically fuelling the TB epidemic. Collaboration between TB and HIV programmes is key to reducing the burden of TB among people living with HIV.

**HIV among TB patients:** The Report finds that HIV testing for TB patients is increasing rapidly in Africa, but few people living with HIV are being screened for TB. "In the last year, we have seen unprecedented collaboration between the TB and HIV communities, but much more is needed if we are to achieve our goal of universal access to quality

TB and HIV prevention, diagnostic, treatment and care services”, said Dr Peter Piot, Executive Director of UNAIDS.

**Extensively drug-resistant TB (XDR-TB):** The spread of XDR-TB poses a serious threat to progress and could even reverse recent gains. “We have a clear plan on how to control XDR-TB, but countries are moving far too slowly on implementing this plan. Funding is an issue as well. It will take an additional US\$ 650 million globally to implement control of both XDR-TB and multi-drug-resistant TB (MDR-TB) in 2007 alone,” said Dr Mario Raviglione, Director of the WHO Stop TB Department. “Beyond that, because of the threat of XDR-TB, research to identify new diagnostics, drugs and vaccines is more vital than ever.”

**Overall funding gap:** Although funds for TB control have risen substantially since 2002, reaching US\$ 2 billion, an additional US\$ 1.1 billion will be needed to meet the 2007 funding requirements set by the Global Plan to Stop TB (2006-2015). A total of US\$ 56 billion, half of which should be funded by endemic countries and the other half by donors, is needed for the 10-year plan, but current funding commitments indicate a gap of at least US\$ 31 billion.

**Lack of infrastructure and capacity:** In most countries with a high burden of TB, efforts to fight TB are impeded by inadequate laboratory facilities and critical shortages of health staff.

Should a sustained downward trend in the TB epidemic develop, it is likely that the Millennium Development Goal of achieving a decrease in the number of tuberculosis cases per year will be satisfied years in advance of the 2015 target. But much more rapid progress is needed for countries to meet the targets in the Global Plan to Stop TB: to halve 1990 TB case numbers and deaths from the disease by 2015.

The Report finds that the WHO Regions of the Americas, South-East Asia and the Western Pacific are now on track to meet their 2015 Global Plan Targets; while the African, Eastern Mediterranean and European regions are not. WHO’s 2005 targets of 70% case detection and 85% cure were narrowly missed globally: case detection was 60% and treatment success was 84%.

#### **Multidrug-resistant TB (MDR-TB) and Extensively drug-resistant TB (XDR-TB):**

TB can usually be treated with a course of four standard, or first-line, anti-TB drugs. If these drugs are misused or mismanaged, multidrug-resistant TB (MDR-TB) can develop. MDR-TB takes longer to

treat with second-line drugs, which are more expensive and have more side-effects. XDR-TB can develop when these second-line drugs are also misused or mismanaged and therefore also become ineffective. Because XDR-TB is resistant to first- and second-line drugs, treatment options are seriously limited and the risk of death is extremely high. Both MDR-TB and XDR-TB can be spread from person to person.

**The Global Plan to Stop TB (2006-2015),** launched by the Stop TB Partnership ([www.stoptb.org](http://www.stoptb.org)) in January 2006, sets forth a roadmap for treating 50 million people for TB and enrolling 3 million patients who have both TB and HIV on antiretroviral therapy over the next 10 years, saving about 14 million lives. It aims to halve TB prevalence and deaths compared with 1990 levels by 2015.

*For more information contact: Geneva/New York:  
Glenn Thomas, Communications Officer, WHO Stop  
TB Department, mobile +41 79 509 0677, email:  
[thomasg@who.int](mailto:thomasg@who.int)*

## **5. WORLD MOVES CLOSER TO ERADICATING ANCIENT WORM DISEASE**

A neglected tropical disease that has afflicted people since ancient times has moved a step closer towards eradication. In early March, twelve more countries were declared Guinea Worm Free by the International Commission for the Certification of Dracunculiasis (Guinea Worm Disease) Eradication. If progress continues at this rate, in less than 2 years Guinea Worm could become the second disease after Smallpox to be pushed into oblivion.

In the early 1980s, an estimated 3 million people in more than 20 countries were affected by Dracunculiasis, more commonly referred to as Guinea Worm Disease. Today, that number has significantly dropped to about 25,000 cases in 9 countries. “This is the culmination of years of effort by local and international groups to see this disease eradicated,” says Dr Lorenzo Savioli, Director of Neglected Tropical Diseases at the World Health Organization. Since its creation in 1995, the Commission has certified 180 countries as free of Guinea Worm. The Commission is now moving closer to its 2009 deadline for eradication of the disease worldwide.

#### **WHO Certifies Twelve More Countries as Guinea Worm Free**

The Sixth Meeting of the International Commission for the Certification of Dracunculiasis

Eradication held 5-7 March, 2007 at World Health Organization Headquarters in Geneva, brought together representatives from a range of organizations, including the Austrian government, the Carter Center, the Centers for Diseases Control and Prevention, the International Federation of Red Cross and Red Crescent Societies and UNICEF to discuss and certify 12 more countries.

In 1995, WHO created the International Commission for the Certification of Dracunculiasis Eradication as an independent body consisting of scientific experts from all over the world. The group meets periodically to assess global progress towards the eradication of Guinea Worm Disease in countries where it remains endemic and to review the list of countries applying for certification - the WHO stamp of approval that declares them free of GWD transmission.

### Debilitating disease

For countless generations, people have suffered from Guinea Worm Disease (GWD). The disease was found in Egyptian mummies and is thought to be the "fiery serpent" often referred to in texts from pharaonic Egypt and Assyrian Mesopotamia.

GWD is endemic in some villages of sub-Saharan Africa. The worm is spread through contaminated water. The effects of the disease are crippling. Its victims develop large ulcers, usually in the lower leg. The ulcers swell, at times to the size of a tennis ball, and burst - releasing a spaghetti-like parasitic worm ranging in length from 550-800 millimetres (0.8 meters).

Victims experience a pain so excruciating that they say it feels as if their leg is on fire. The searing pain compels people to jump into water, often the community's only source of drinking water, to relieve the pain. When the infected person immerses their leg in the water, the worm in their leg releases thousands of larvae. The larvae are then ingested by water fleas that live in the water. Thus the cycle begins again— when a person drinks the water, they are in effect drinking in the disease.

The socio-economic effects of the disease are numerous. The disability caused by the disease is seasonal, usually re-emerging during harvest season in the villages, which is why it is often called "the disease of the empty granary." As a result of the pain associated with GWD, farmers are left incapacitated and unable to harvest their crops, contributing to malnutrition in children since the primary caregivers, the infected parents, are in such physical agony that they cannot properly provide for their young. Children affected by GWD miss school for months at a time, hindering their educational growth. The disease keeps its victims

imprisoned in a cycle of pain and poverty.

### Infection Prevention

There are a number of low-cost methods to prevent people from becoming infected:

- Providing safe drinking water supplies
- Filtering drinking water using fine-mesh cloth
- Intensifying case containment (health worker can clean the ulcer, gradually pulling out the worm, disinfecting and bandaging the lesion to prevent secondary bacterial infection)
  - Preventing infected persons from wading into water sources to relieve the pain
  - Intensifying health education and social mobilization
  - Treating ponds (water sources) with Abate (which kills the water fleas)

### Coordinated efforts and renewed optimism

Eradicating GWD in the countries where it is still endemic remains the most challenging task. The Commission urged partners to endorse the need for a more aggressive approach towards the eradication of GWD pushing for a higher profile in WHO. For decades, an army of health workers from WHO and various organizations all over the world dedicated to this cause have been deployed and work round-the-clock to ensure that prevention methods are carried out and existing cases are monitored. "This disease can be arrested easily, and with a more stream-lined approach to transmission control and the priority that the Director-General has given to neglected tropical diseases, we are on our way to eradicating this disease for good," says Dr Abdul Rahman Al-Awadi, the Chairman of the International Commission.

The Commission concluded that eradication remained an achievable goal. The recent commitment of the Director-General to address the neglected tropical diseases as part of poverty-reduction strategies, giving particular attention to Africa, provides the window of opportunity desperately needed to achieve this goal.

*For more information contact: Tiffany Domingo, WHO, Geneva, Tel. +41 22 791 1540, Mobile: +41 79 516 3136, Email: [domingoc@who.int](mailto:domingoc@who.int) or consulte the web site: <http://www.who.int/dracunculiasis/en/>.*

## 6. GUIDELINES ON CULTIVATING ESSENTIAL PLANT USED IN ANTI-MALARIA MEDICINES

In March 2007, the World Health Organization (WHO) published guidelines for the cultivation and collection of *Artemisia annua* L, a Chinese traditional medicinal plant which is the source of artemisinin, used to produce the most effective

medicines for malaria. The guidelines will contribute to improving the quality of *Artemisia annua* L to further develop artemisinin-based medicines, and help ensure a sustainable supply to meet market demand.

*Artemisia annua* L, used in Chinese traditional medicine for centuries, is today considered part of the solution where malaria has become resistant to other medicines. Artemisinin-based combination therapies (ACTs) have been recommended by WHO since 2001 in all countries where falciparum malaria - the most resistant form of the disease - is endemic.

Since then, the world market for products containing artemisinin derivatives has grown rapidly. However, not all artemisinin meets the required standards to produce quality medicines, making it all the more urgent to promote best practices in the cultivation and collection of the raw material used to make the combination therapy.

About 40% of the world's population is at risk of contracting malaria which is resistant to other medicines. Of the 76 countries needing artemisinin-based treatment today, 69 have adopted the WHO recommendation to use this therapy.

The availability of these treatments still falls short of what is needed. Of an estimated 600 million people needing ACTs worldwide, only about 82 million are receiving the treatment through public sector distribution systems (which constitute 90% of antimalarial distribution in developing countries).

The "WHO monograph on good agricultural and collection practices for *Artemisia annua* L." provides a detailed description of the cultivation and collection techniques and measures required for a harvest to meet quality requirements. The information is based on research data and the practical experience of several countries where successful cultivation practices have led to a high yield of good quality *Artemisia annua* L.

As with most medicinal herbs, artemisinin's contents and efficacy are subject to climatic, geographical and environmental conditions. Not all *Artemisia annua* plants necessarily contain artemisinin and in some places, depending on the quality of the soil and rainfall, the content may be very low and without industrial value. These factors make it necessary to run pilot tests of cultivation on small areas of land to ensure that the land selected is suitable for growing high-yield plants before large-scale cultivation begins.

Cultivation of *Artemisia annua* requires a minimum of 6 months and extraction, processing and manufacturing of the final product require at least 2-5 months depending on the product formulation. High temperatures during post-harvest handling can damage the quality of the plant. After harvesting or collection, the artemisinin content of the leaves will gradually decrease. The value of the raw material for extraction can be lost after six to twelve months' storage.

The authors of the guidelines caution governments on two fronts. First, they must ensure that farmers work with manufacturers to determine the actual market demand for the plant. Recent experience in some countries has shown that overproduction not only wastes money and time, it can also have a negative effect on the plant's future yield. Second, they must ensure the availability of the technical skills and know-how needed to extract artemisinin from dried leaves.

The WHO monograph also aims to provide a model for countries and researchers to develop further monographs on good agricultural and collection practices for other medicinal plants, and promote the sustainable use of the plant as part of the larger aim of protecting the wild resources of medicinal plants.

Recent estimates of the global malaria burden have shown increasing levels of illness and death caused by malaria, reflecting the deterioration of the malaria situation in Africa during the 1990s. About 90% of all deaths from malaria occur in Africa, in the areas south of the Sahara, and the great majority of these are in children under the age of five.

Key among the factors contributing to increasing malaria mortality and morbidity is the widespread resistance of *Plasmodium falciparum* to conventional antimalarial drugs, such as chloroquine, sulfadoxine-pyrimethamine and amodiaquine. The rising tide of counterfeit and substandard malaria medicines in parts of Africa and Asia contributes to the problem of resistance. Multidrug-resistant *Plasmodium falciparum* malaria is also widely prevalent in south-east Asia and South America.

*The Guidelines can be found at:*

*<http://www.who.int/entity/medicines/publications/traditional/ArtemisiaMonograph.pdf>*