WHO ISSUES REVISED DRINKING WATER GUIDELINES TO HELP PREVENT WATER-RELATED OUTBREAKS AND DISEASE

Marrakech/Geneva - Ensuring drinking water is safe is a challenge in every part of the world, from water piped into people’s homes, to rural wells and water provided to refugee camps in an emergency. Contamination of drinking water is too often detected only after a health crisis, when people have fallen ill or died as a result of drinking unsafe water. Today, WHO is releasing new recommendations which will help pre-empt drinking water contamination.

WHO advises national and local drinking water regulators, and the enterprises and organizations which actually provide drinking water to five billion people around the world, that the challenge of providing safe drinking water is growing. WHO’s updated Guidelines for Drinking-water Quality (GDWQ) will help regulators and water service providers the world over maintain and improve the quality of their drinking water.

“This is an extremely important change in orientation from a public health point of view. The revised Guidelines will allow public health management to focus on prevention of microbial and chemical contamination of water supplies,” said Dr Kerstin Leitner, WHO Assistant Director-General for Sustainable Development. “And they have as much applicability whether we are talking about an urban drinking water system in North America, or protected wells in the developing world. This new approach exhorts all parties working on drinking water provision and control to act in such a way that outbreaks of water-borne diseases can be further reduced.”

Traditionally, drinking water regulations have emphasised testing water samples for levels of chemical and biological contaminants. Relying on this approach means that problems are detected long after water is consumed - a remedial rather than preventive approach.

Outbreaks due to microbes in drinking water can affect hundreds of thousands of people. In recent years, communities large and small in some of the world’s most developed countries have been affected by contaminated drinking water. In Canada, disease outbreaks due to E.coli O157 and Campylobacter, or Cryptosporidium in the United States, Japan and France as recently as this month, show what can happen if vigilance is not maintained.

The Hepatitis E outbreak currently sweeping through internally-displaced-persons camps in Darfur, Sudan and refugee camps in neighbouring Chad is one example of how water-borne disease affects poor and disadvantaged populations. These new guidelines on drinking-water quality include new guidance on their application in specific settings such as emergencies and disasters.
The updated Guidelines represent a paradigm shift in advice on how to manage the provision of drinking water, both in the developed and developing world, in large urban settings and in the rural areas or villages. Henceforth, according to the revised GDWQ, the recommended approach for regulators and operators is to manage drinking water quality in a holistic, systematic fashion from source to tap. This includes ensuring water reservoirs, or, local wells, aren't at risk of contamination from human and animal waste, to checking basics like the regular changing of water filters.

"This third edition of the WHO Guidelines for Drinking-water Quality is the most significant water-related public health development since the introduction of chlorine. The Guidelines' requirement for drinking water safety plans should be incorporated in regulations across the world," says Dr Michael Rouse, President of the International Water Association (IWA).

The new edition has reviewed and revised the recommended values for chemical limits in drinking water in line with the latest scientific evidence. The GDWQ reconfirm guideline values for over 100 chemicals. Because routine monitoring for all of the chemicals is not possible, the guidelines set out practical approaches to 'rule out' some chemicals and to prioritize others using readily available information.

In the accompanying annex, examples from around the world show how much more of an impact prevention rather than response can have in maintaining drinking-water quality.

The full Guidelines are available on-line at: http://www.who.int/water_sanitation_health/dwq/guidelines/en/

The brochure on Water for Health - WHO's Guidelines for Drinking-water Quality is also available on-line at http://www.who.int/water_sanitation_health/advocdocs/en/

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All WHO Press Releases, Fact Sheets and Features as well as other information on this subject can be obtained on Internet on the WHO home page: http://www.who.int/.
ANNEX

Africa
The latest edition of the GDWQ considers the application of household water treatment and safe storage technologies, which is becoming increasingly relevant with 1.1 billion people in rural and urban areas still relying on unsafe drinking water from rivers, lakes, and open wells. In Sub-Saharan Africa, underground water may have high mineral or chemical content, such as arsenic and particularly high fluoride levels. In some districts of Kenya, South Africa, Tanzania and Uganda, for example, fluoride levels in underground water ranged up to 25 mg/litre - far above the 1.5 mg/litre limit value recommended by the GDWQ. In those countries, populations suffer from dental and severe skeletal fluorosis.

Vulnerable populations cannot afford to wait for the ultimate goal of clean, piped water. Increasingly, water service providers are recognizing the value of, seeking guidance about, and implementing point-of-use interventions. In one example, a recent study conducted among 400 households in a Malawian refugee camp indicated that using a water container with a cover and a spout significantly decreased contamination of water and resulted in 31% fewer cases of diarrhoeal disease in children under five.

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North America
In recent years in Walkerton and North Battleford, Canada, disease outbreaks due to *E.coli* O157 and *Campylobacter*, or, in the United States, to *Cryptosporidium* have occurred. As recently as this month, contamination of drinking well water in the U.S state of Ohio by *E.coli* was being reported. In some cases there have been hundreds of thousands of cases of illness because of these microbes in drinking water, showing what can happen when there is not preventive management of drinking water quality. In response to these outbreaks, regulatory authorities have shifted towards a more preventive approach, instigating for example the surface water treatment rule in the USA.

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Asia
Problems of naturally-occurring arsenic in drinking water in Bangladesh continue to attract much concern, especially because of the scale of the affected population. Some 35 million people in that country alone consume water containing elevated levels of arsenic. Other affected countries include India, China, Myanmar, Viet Nam, Laos and Cambodia.

In China, elevated fluoride in drinking water causes over 26 million people to suffer from dental fluorosis and is thought to cause one million people to suffer from skeletal fluorosis. In India, more than 66 million people consume drinking water with elevated fluoride.

The communities living in Pacific island countries confront severe logistical challenges in organizing safe drinking-water supply. A standard "sampling and analysis" approach to monitoring could never really ensure quality for these isolated populations. Preventive monitoring is more likely to work. Vulnerable fresh water lenses on island "atolls" demand holistic management and public participation if the precious resource is to be sustained.

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Eastern Mediterranean Region
The quality of water supplies in the WHO Eastern Mediterranean region (EMRO) countries does not always comply with national standards, with serious public health consequences, including disease outbreaks. Earlier this year, much publicized outbreak of diarrhoea occurred recently in Hyderabad, Pakistan; over 4000 patients suffering from acute watery diarrhoea were admitted in hospitals in May/June 2004.

In most countries, water scarcity is the general rule, but at the same time, water wastage is widespread and the available water resources are threatened by salt water intrusion, pollution, and eutrophication. Hence, over 60% of the world’s installed desalination capacity is located in the Region and the cost to extend and sustain water supply services is rising. EMRO is receiving requests for guidance on the minimum amounts of domestic water that should be supplied for domestic purposes as well as on issues unique to desalination operations and water quality. On the other hand, water supply systems operate intermittently in a number of countries, due to the severe shortages of freshwater, and inadequate maintenance and poor management. Closer drinking-water quality control is required, since water quality deterioration in the supply system and in household storage facilities occurs even where piped water supply is ensured.

Western Europe
Disease outbreaks related to water continue to occur also in the most economically developed European countries. The main cause of outbreaks is often contamination of the raw water supply combined with missing or faulty disinfecting procedures.

- In the fifteen years from 1988 -2002, Norway recorded 72 outbreaks, affecting a total of 10,616 persons, due either to contamination and/or failed disinfection.
- The United Kingdom reported 26 outbreaks of waterborne infectious intestinal diseases in England and Wales in the period 1992 - 1995 with the most important case affecting 575 people.
- Important outbreaks occur, for example, in areas with small unchlorinated supplies (Finland, 463 cases of gastroenteritis in a population of 8,600; nationally 14 waterborne epidemics in the period 1998 – 1999 with 7 300 cases of illness), or in settings where people gather in considerable densities (Sweden, 500 people, ski resort; Italy, tourism area, 344 people).

Eastern Europe and the Commonwealth of Independent States
Although improvements are being made in some areas, the burden of water-related diseases remains significantly higher in the eastern, compared to the western, part of the European region. The Standardized Death Rate from diarrhoeal diseases for children under age five per 100 000 fell in the Commonwealth of Independent States (CIS) from 70.03 in 1993 to 21.58 in 2001 and in the Central Asian Republics from 176.26 to 44.63. Nevertheless, the burden remains much higher than in the 15 countries of the EU where the rate was 0.64 in 1993 and decreased to 0.36 in 2001. A similar picture is shown by viral hepatitis A incidence per 100 000. In the CIS it fell from 186.76 to 86.28 between 1993 and 2001, in the Central Asian Republics from 395.52 to 142.69. In the EU -15, the decrease was from 7.61 to 4.71 in the same period. Much, therefore, still needs to be done, especially in the eastern part of WHO’s European Region, to achieve common, high standards of drinking-water quality.

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Latin America and the Caribbean

Only 24% of the urban population of Latin America and the Caribbean has some water quality control surveillance system. In Honduras, Nicaragua, Haiti, Guyana and Bolivia, more than 50% of the population has access to piped drinking water less than 50% of the time. Moreover, the population covered with adequate surveillance systems and water quality control is very limited in the urban areas and insignificant in the rural areas. The fact that more than one-third of the deaths in Latin America and the Caribbean of children under five years old are due to communicable diseases highlights the critical role that provision of safe and reliable drinking water could play in reducing child mortality. It is envisaged that the new Guidelines for Drinking-water Quality will facilitate national and local authorities in the improvement of water quality at local level.

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NATIONAL TECHNICAL EXPERTS AVAILABLE FOR INTERVIEWS

Experts who have been part of the Technical Committee working on the revision of the Guidelines and who can comment on drinking water challenges and successes in their countries include:

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