

Importance of Water and Water-Borne Diseases: On the Occasion of the World Water Day (March 22, 2013)

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HISTORY OF THE IMPORTANCE AND SACREDNESS OF WATER

International World Water Day is held annually on 22nd March as a means of focusing attention on the importance of freshwater. An international day was recommended at the 1992 United Nations Conference on Environment and Development. The United Nations General Assembly responded by designating 22 March 1993 as the first World Water Day.^[1]

The importance of water has attracted human attention, since ancient time. About 6000 years before Christ, Iranians have admired and respected the water, and it has not been contaminated by them.^[2] According to the Holy Avesta, at the time monotheistic prophet, Zoroaster (6000 BC) have been wrote in praise of water: "O ye waters! Now, we worship you, you that are showered down, and you that stand in pools and vats, and you that bear forth. You that serve us all in helpful ways, well forded and full-flowing, and effective for the bathing, we will seek you and for both the worlds! Therefore, did God give you names, O ye beneficent ones! When he who made the good bestowed you. And by these names we worship you, and by them we would ingratiate ourselves with you, and with them would we bow before you, and direct our

prayers to you with free confessions of our debt. O waters, ye who are productive, and ye maternal ones, ye with heat that suckles the frail and needy before birth, ye waters that have once been rulers of us all, we will now address you as the best, and the most beautiful; those are yours, those good objects of our offerings, ye long of arm to reach our sickness, or misfortune, ye mothers of our life!"^[3] In the Old Testament Book (1300 BC) the water is known as a holy material and wrote: "Let heaven and earth praise him. The seas and everything that moveth therein."^[4] The Holy Quran (650 AC) has named the "water" as the main source of the life and has wrote: "We made from water every living thing."^[5]

CLASSIFICATION OF WATER-RELATED DISEASES

- Those due to micro-organisms and chemicals in drinking water;
- Diseases like schistosomiasis which have part of their lifecycle in water;
- Diseases like malaria with water-related vectors;
- Drowning and some injuries;
- Diseases such as legionellosis, carried by aerosols containing certain micro-organisms.^[6]

EXAMPLES OF RELATED INFECTIOUS AND NON-INFECTIOUS DISEASES

- Diarrhoeal disease: 2 million annual deaths attributable to unsafe water, sanitation and hygiene
- Cholerae: More than 50 countries still report cholerae to World Health Organization
- Cancer and tooth/skeletal damage: Millions exposed to unsafe levels of naturally-occurring arsenic and fluoride
- Schistosomiasis: An estimated 260 million infected.^[7]

Cholerae is the leading cause of waterborne infectious diseases and also an obvious example of an emerging infection. An emerging disease is one that has appeared in a population for the first time (new-emerging), as like as *Vibrio cholerae* O139, or that may have existed previously but is rapidly increasing in incidence or geographic range (re-emerging), as like as the current spread of *V. cholerae* O1 in Haiti region.^[8] In 2011, cholerae cases caused by *V. cholerae* have been reported from all regions of the world. A total of 58 countries reported to a cumulative total of 589,854 cases including, 7816 deaths with a case fatality rate of 1.3%, representing an increase of 85% in number of cases compared with the previous year. The increase in number of global cases compared with 2010 is the result of a major outbreak, in Haiti. The explosive nature of the outbreak was linked to the limited access to safe drinking-water and basic sanitation, and the internal migration that followed the earthquake in January 2010.^[9]

BURDEN OF WATER-BORNE DISEASE

Poor water quality continues to pose a major threat to human health. Diarrheal disease alone amounts to an estimated 4.1% of the total Disability Adjusted Life Year (DALY) global burden of disease and is responsible for the deaths of 2 million people every year. It was estimated that 88% of that burden is attributable to unsafe water supply, sanitation, and hygiene and is mostly concentrated on children in developing countries.^[10]

PREVENTIVE MEASURES

A significant amount of disease could be prevented especially, in developing countries

through better access to safe water supply, adequate sanitation facilities and better hygiene practices. In order to allow informed decision-making on interventions aimed at disease prevention and control, it is crucial to carryout a sound economic evaluation of the various options available in specific settings.^[10]

- Nearly 4% of the global disease burden could be prevented by improving water supply, sanitation, and hygiene
- A growing evidence base on how to target water quality improvements to maximize health benefits
- Better tools and procedures to improve and protect drinking-water quality at the community and urban level, for example through Water Safety Plans
- Availability of simple and inexpensive approaches to treat and safely store water at the household-level.^[7]

Water, sanitation and hygiene have important impacts on both health and disease. There is no doubt that clean water is life-saving and the living is not possible without it. However, if this redemptive matter, become polluted it may become a virulent and lethal element, that has happened, repeatedly in the history, and even have led to horrible and piercing pandemics and today it is likely to contribute to emerging and re-emerging diseases. So while commemorating World Water Day 2013 we must avoid contaminated water and avoid from contaminating it.

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