

Health and safety in recreational waters

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The recreational use of waters has increased in recent decades all over the world. Swimming pools and other recreational water facilities offer opportunities for enjoyment and health promotion, but they also may involve health risks, despite the fact that better management and modern technologies for water treatment and quality monitoring (e.g. real-time protocols for detecting bacteria), have made such facilities safer.^{1,2}

Several communicable diseases – cryptosporidiosis, giardiasis, leptospirosis, legionellosis, bacterial and viral gastroenteritis – are commonly associated with bathing in recreational waters.^{3,4} According to field study surveys in different countries, the rate of diarrhoeal illness among swimmers ranges from 3 to 8%.^{5,6} Injuries are also common. In the United Kingdom of Great Britain and Northern Ireland alone, more than 13 000 injuries are estimated to occur annually, on average, among bathers.^{3,4} Preventing injuries, drownings, the toxic effects of chemical contaminants and outbreaks of waterborne diseases in people who swim in recreational waters calls for a sustained, concerted, multisectoral effort involving epidemiologists, physicians, microbiologists, toxicologists, builders, public opinion leaders and public health authorities.

Swimming pools and spas are used by millions of people seeking recreation, rehabilitation, wellness and other health benefits. According to 2011 market data issued by the European Union of Swimming Pool and Spa Associations, 5.7 million pools exist in Europe, or about one for every 150 inhabitants.⁷ A large part of the world's population is exposed to the health risks posed by swimming pools, which account for much of the world's water consumption.⁸ This includes children, the elderly, pregnant women and people with immunodeficiency and disabilities. People in certain occupations, such as swimming coaches, water sport professionals and pool operators, are also exposed to such risks.

In the twenty-first century, international safety standards or harmonized

national safety laws are essential in light of the booming tourist industry – now the third largest in the world. From a global health perspective, water facilities must be made safe not just for resident populations, but also for travellers. The absence of an international regulatory framework for pool and spa safety and the presence of incomplete national regulations in many countries put local populations and visitors at risk. For example, Europe's lack of a directive on safety in swimming pools and other recreational water facilities limits standardization and harmonization throughout the continent.

Several institutions have recognized the need for international pool and spa safety regulations. This point was discussed in Rome last April, at the Fifth International Conference on Swimming Pool and Spa.⁹ The Conference focused on the role of aquatic recreational environments in health promotion but also called attention to the need for good surveillance and prevention to reduce safety hazards. Engineers, chemists, biologists, public health experts, architects, sociologists, occupational medicine specialists and ecologists were in attendance. This large and committed panel of experts can update safety guidelines periodically and support their local dissemination through universities and research centres, public health authorities, swimming pool managers and sports clubs and organizations catering to tourists and local residents.

Conference attendees also discussed new technologies for monitoring the microbiological and chemical safety of recreational waters. Technological innovations can play a pivotal role in prevention. Rapid techniques for monitoring water quality can allow for quick measures in response to contamination. The new technologies are gradually shifting the focus from mandatory safety requirements towards expectations of good water quality and towards the implementation of collaborative surveillance strategies based on the hazard analysis and critical control

point model. Use of the new technologies must, of course, be harmonized and adopted in consultation with public health institutions to avoid any risk to bathers from the application of unvalidated procedures.

Appropriate water sanitation and safety measures are not the only priorities, however. Water is a scarce commodity. The conservation of this most precious resource and its rational use in recreation calls for advanced water management in the context of sustainable development. This and other issues will be discussed in Amsterdam in 2015 at the Sixth International Conference on Swimming Pool and Spa,¹⁰ which scientists are currently organizing, together with World Water Day (22 March 2014) and other activities promoted by agencies such as UN-Water and the United Nations Educational, Scientific and Cultural Organization. ■

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