

# Swimming pools, spa and recreational water



Katherine Pond

# Background



WGWH II

- Protocol Art 6 para 2(k)
- WHO 2006 Guidelines for Safe Recreational Water Environments
- Bureau accepted offer from the Robens Centre for Protection of Water Quality and Human Health to study

# Results

**1. About you**

In 2006 the World Health Organization published Guidelines for Swimming Pools and Similar Recreational Water Environments which provide a referenced review and assessment of the health hazards associated with these types of waters; their monitoring and assessment; and activities available for their control through education of users, good design and construction, and good operation and management. The Guidelines include specific guideline values and good practices. They address a range of hazards including physical hazards, drowning, chemical, microbial contamination of the water and air quality.

The types of pools of interest are: swimming pools (public, semi-public or private) supplied with fresh, marine or thermal waters; supervised or unsupervised. Hot tubs, plunge pools, natural spas and physical therapy pools are also included. For full definitions of these pools please refer to the Guidelines which can be found at: [http://www.who.int/water\\_sanitation\\_health/bathing/bathing2/en/](http://www.who.int/water_sanitation_health/bathing/bathing2/en/)

The aim of this questionnaire is to assess current issues associated with swimming pools and similar water environments; assess use and implementation of the WHO Guidelines for swimming pools and similar recreational water environments; and seek feedback on issues meriting any potential future update of the Guidelines.

Please note: we are NOT interested in natural (coastal or inland) bathing waters in this questionnaire.

The survey is divided into sections. Section 1 is about you and your organization. Section 2 is related to controls; sections 3 and 4 are about the WHO Guidelines and section 5 is related to the environmental quality around the recreational water facility. Please note, once you begin answering the questionnaire you cannot save it and return later. The questionnaire should take about 15 minutes to complete.

**1. Please provide the following information about yourself.**

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Address 2: \_\_\_\_\_

City/Town: \_\_\_\_\_

State: \_\_\_\_\_

ZIP/Postal Code: \_\_\_\_\_

Country: \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_

**2. Is your profession related to swimming pools or similar recreational water environments?:**

Yes

No

- 29 responses – 36% regulators, 23% researchers
- 11 countries:  
Andorra, Czech Republic, Estonia, Georgia, Germany, Greece, Hungary, the Netherlands, Romania, Switzerland, United<sup>3</sup>

## Areas of investigation (% of respondents aware of regulations)

- Public pools (95% - mandatory)
- Private pools (30% - voluntary, some mandatory)
- Hot tubs (57% - voluntary)
- Physical therapy pools (48% - generally nationwide voluntary)
- Natural spas (26% - mixture)
- WHO (95%)

# Discussion on public swimming pools

- Inconsistencies between national and local mandatory, and between national and local voluntary regulations
- Inconsistencies in application
- Other aspects of pool safety not consistency regulated: user hygiene, air quality, disinfection systems

# Main problems relating to swimming pools, spas and similar recreational water environments

**5. Questions relating to the environmental quality surrounding your facility**

Section 5 is related to problems related to swimming pools and similar environments that could compromise health. We are interested to know what the main problems are and what research is needed.

**1. Please answer this section for ONE type of facility that you are familiar with. Please specify the type of facility you are answering the following questions for.**

Public swimming pool  
 Private swimming pool  
 Hot tub (Jacuzzi)  
 Water park  
 Spa  
 Other (please specify) \_\_\_\_\_

**2. Are you responsible for managing this facility?**

Yes  
 No

**3. In the last 12 months, what have been the main problems associated with the facility specified in question 5/1 (please rank according to frequency of the problem occurring, ie 1 being the most frequent problem)**

	Most frequently occurred	2nd	3rd	4th	5th	6th	Least frequently occurred
Microbial contamination of the water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chemical hazards associated with the water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chemical hazards associated with air	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physical hazards associated with the construction of the facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physical injuries associated with users	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Risks associated with plant and equipment malfunction and other problems (please specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**4. Please give further details or an example of the main problem encountered in this facility over the past 12 months.**

\_\_\_\_\_

\_\_\_\_\_

- Section answered primarily in relation to public swimming pools (72%)
- Most frequently reported problems in last 12 months:
  - Microbial contamination of water;
  - Chemical hazards associated with water;
  - Physical injuries associated with users
  - Risks associated with plant and equipment malfunction.

# Basis for problem identification

- 72% public swimming pools
- 18% hot tubs
- 50% felt that sufficient health-based evidence exists to support further regulation, 31% did not.

# Urgent research needs

- Technical standards for the operation
- Exposure to disinfectant by-products
- Link between trichloroamine in air of indoor pools and asthma
- Adequate treatment for spa
- Plant room safety



## Possible action

- Improving and harmonizing health surveillance
- Development of technical standards for the operation of swimming pools, particularly with regard to chemical use
- Harmonization of legislation regarding pool operation and safety across Europe
- Analysis of good practice to increase safety in pool areas