

# 2016 Annex to the Model Aquatic Health Code

## *Scientific Rationale*

### RESOURCES



## 7.0 MAHC Resources

### A Note about Resources:

*The resources used in all MAHC modules come from peer-reviewed journals and government publications. No company-endorsed publications have been permitted to be used as a basis for writing code or annex materials.*

Aggazzotti G, Fantuzzi G, Righi E, Predieri G. Blood and breath analyses as biological indicators of exposure to trihalomethanes in indoor swimming pools. *Science of the Total Environment* (1998);217:155-163.

Ainsworth BE, Haskell WL, Herrmann SD, Meckes N, Bassett DR Jr, Tudor-Locke C, Greer JL, Vezina J, Whitt-Glover MC, Leon AS. 2011 Compendium of physical activities: a second update of codes and MET values. *Med Sci Sports Exerc.* (2011) Aug;43(8):1575-81.

Alberta. Pool standards, 2006 for the swimming pool, wading pool, and water spray park regulation. Accessed on July 6, 2016 at:  
<http://www.health.alberta.ca/documents/Standards-Pools.pdf>.

Albrand OW, Walter J. Underwater deceleration curves in relation to injuries from diving. *Surg Neurol.* 1975;4(5):461-4.

Alhadj M, Nelson NG, McKenzie LB. Hot tub, whirlpool, and spa-related injuries in the U.S., 1990-2007. *Am J Prev Med.* 2009 Dec;37(6):531-6.

Allen LM, Briggie TV, Pfaffenberger CD. Absorption and excretion of cyanuric acid in long-distance swimmers. *Drug Metab Rev.* 1982;13(3):499-516.

Allison TG, Reger WE. Thermoregulatory, cardiovascular, and psychophysical response to alcohol in men in 40 degrees C water. *J Appl Physiol.* 1992 Jun;72(6):2099-107.

Amburgey JE, Walsh KJ, Fielding RR, Arrowood MJ. Removal of *Cryptosporidium* and polystyrene microspheres from swimming pool water with sand, cartridge, and precoat filters. *J Water Health.* 2012;10(1):31-42.

American Academy of Pediatrics, American Public Health Association, and National Resource Center for Health and Safety in Child Care and Early Education (2002). *Caring for Our Children: National Health and Safety Performance Standards; Guidelines for Out-of-Home Child Care Programs*, 2nd edition. Elk Grove Village, IL: American Academy of Pediatrics and Washington, DC: American Public Health Association. Available at <http://nrckids.org>.

American Academy of Pediatrics Committee on Injury, Violence, and Poison Prevention. Prevention of Drowning. *Pediatrics.* 2010;126(1):178-85.

American Heart Association Guidelines. Available at :

[http://www.heart.org/HEARTORG/CPREandECC/Science/Guidelines\\_UCM\\_303151\\_SubHomePage.jsp](http://www.heart.org/HEARTORG/CPREandECC/Science/Guidelines_UCM_303151_SubHomePage.jsp).

American Red Cross. ACFASP Scientific Review. CPR Skill Retention review. Accessed at

<http://www.instructorcorner.org/media/resources/SAC/Reviews/CPR%20Skill%20Retention.pdf>.

American Water Works Association. Operational control of coagulation and filtration processes: AWWA Manual. 2010;M37, 3<sup>rd</sup> ed. American Water Works Association, Denver, CO. ISBN: 978-1-58321-801-3.

Anderson AR, Welles WL, Drew J, Orr MF. The distribution and public health consequences of releases of chemicals intended for pool use in 17 states, 2001-2009. J Environ Hlth 2014;76:10-15.

Anderson JR. A study of the influence of cyanuric acid on the bactericidal effectiveness of chlorine. Am J Public Health. 1965 Oct;55(10):1629-37.

Andersson M, Hedman L, Nordberg G, Forsberg B, Eriksson K, Rönmark E. Swimming pool attendance is related to asthma among atopic school children: a population-based study. Environ Health. 2015 Apr 15;14:37.

Angenent LT, Kelley ST, St Amand A, Pace NR, Hernandez MT. Molecular identification of potential pathogens in water and air of a hospital therapy pool. PNAS 2005;102(13):4860-5.

Anipsitakis GP, Tufano TP, Dionysiou DD. Chemical and microbial decontamination of pool water using activated potassium peroxymonosulfate. Water Res. 2008 Jun;42(12):2899-2910.

APHA, AWWA, and WEF. (2012) *Standard Methods for the Examination of Water and Wastewater*, 22<sup>nd</sup> ed. E.W. Rice, R.B. Baird, A.D. Eaton, and L.S. Clesceri (eds). New York: American Public Health Association.

ASHRAE. 2013 ASHRAE Handbook—Fundamentals. Accessed 12/11/13 from <https://www.ashrae.org/resources--publications/handbook/description-of-the-2013-ashrae-handbook--fundamentals>

ATSDR. Toxicological profile for chlorine. (2010) Available at: <http://www.atsdr.cdc.gov/tfacts172.pdf>. Accessed on: 05/01/2013.

Barbee SJ, Thackara JW, Rinehart WE. Acute inhalation toxicology of nitrogen trichloride. Am Ind Hyg Assoc J. 1983;44(2):145-6.

Barss P, Djerrari H, Leduc BE, Lepage Y, Dionne CE. Risk factors and prevention for spinal cord injury from diving in swimming pools and natural sites in Quebec, Canada: a 44-year study. *Accid Anal Prev*. 2008;40(2):787-97.

Beech JA, Diaz R, Ordaz C, Palomeque B. Nitrates, chlorates and trihalomethanes in swimming pool water. *American Journal of Public Health* (1980); 70(1): 79-82.

Beer CW, Guilmartin LE, McLoughlin TF, White TJ. 1999. Swimming pool disinfection: efficacy of copper/silver ions with reduced chlorine levels. *J Environmental Health*, 61(9): 9-12.

Belgian Superior Health Council. Publication no. 8748: The issue of chlorine in swimming pools: Risk attendant on baby swimming and reflections on the different methods used to disinfect swimming pools.

Bernard A, Carbonnelle S, Michel O, Higuete S, de Burbure C, Buchet JP, Hermans C, Dumont X, Doyle I. Lung hyperpermeability and asthma prevalence in schoolchildren: unexpected associations with the attendance at indoor chlorinated swimming pools. *Occupational and Environmental Medicine* (2003); 60: 385-394.

Bessonneau V, Derbez M, Clément M, Thomas O. Determinants of chlorination by-products in indoor swimming pools. *Int Hyg Environ Health*. 2011;215:76-85.

Betancourt WQ, Rose JB. Drinking water treatment processes for removal of *Cryptosporidium* and *Giardia*. *Vet Parasitol*. 2004;126(1-2):219-34.

Blanksby BA, Wearne FK, Elliott BC, Blitvich JD. Aetiology and occurrence of diving injuries. A review of diving safety. *Sports Med*. 1997 Apr;23(4):228-46.

Blatchley E, Cheng M. Reaction mechanism for chlorination of urea. *Environ Sci Technol*. 2010;44(22):8529-8534.

Blatchley ER, Margetas D, Ravikrishna D. Copper catalysis in chloroform formation during water chlorination. *Water Res* 2003;37:4385-4394.

Blitvich JD, McElroy GK, Blanksby BA, Clothier PJ, Pearson CT. Dive depth and water depth in competitive swim starts. *J Swimming Res*. 2000;14:33-39.

Bonneau J, Brown J. Physical ability, fitness and police work. *J Clin Forensic Med*. 1995;2(3):157-64.

Borgmann-Strahsen, R. Comparative assessment of different biocides in swimming pool water, *International Biodeterioration and Biodegradation* 2003;51:291-297.

Borius PY, Gouader I, Bousquet P, Draper L, Roux FE. Cervical spine injuries resulting from diving accidents in swimming pools: outcome of 34 patients. *Eur Spine J*. 2010 Apr;19(4):552-7.

Bowen AB, Kile JC, Otto C, Kazerouni N, Austin C, Blount BC, Wong HN, Beach MJ, Fry AM. Outbreaks of short-incubation ocular and respiratory illness following exposure to indoor swimming pools. *Environ Health Perspect.* 2007 Feb;115(2):267-71.

Brescia CC, Griffin SM, Ware MW, Varughese EA, Egorov AI, and Villegas EN. (2009) *Cryptosporidium* propidium monoazide-PCR, a molecular biology-based technique for genotyping of viable *Cryptosporidium* oocysts. *Applied and Environmental Microbiology*, 75:6856-6863.

Broadbent C. (1996) *Guidance on water quality for heated spas*. Rundle Mall, South Australia: Public and Environmental Health Service.

Brown JR, McLean DM, and Nixon MC. Bromine disinfection of a large swimming pool. *Can J Public Health.* 1964 Jun;55:251-6.

Browne ML, Lewis-Michl EL, Stark AD. Unintentional drownings among New York State residents, 1988-1994. *Public Health Rep.* 2003 Sep-Oct;118(5):448-58.

Burnsed LJ, Hicks LA, Smithee LM, Fields BS, Bradley KK, Pascoe N, Richards SM, Mallonee S, Littrell L, Benson RF, Moore MR; Legionellosis Outbreak Investigation Team. A large, travel-associated outbreak of legionellosis among hotel guests: utility of the urine antigen assay in confirming Pontiac fever. *Clin Infect Dis.* 2007;44(2):222-8.

Buss BF, Safranek TJ, Magri JM, Török TJ, Beach MJ, Foley BP. Association between swimming pool operator certification and reduced pool chemistry violations — Nebraska, 2005–2006. *J Environ Health.* 2009;71(8):36–40.

Cammann K, Hubner K. Trihalomethane concentrations in swimmers' and bath attendants' blood and urine after swimming or working in indoor swimming pools. *Archives of Environmental Health* (1995); 50(1): 61-65.

Camper AK, LeChevallier MW, Broadway SC, and McFeters GA. (1985) Growth and persistence of pathogens on granular activated carbon filters. *Journal of Applied Environmental Microbiology*, 50:1378–82.

Cantor KP. Carcinogens in drinking water: the epidemiologic evidence. *Rev Environ Health.* 2010;25(1):9-16.

Cary WH. Administration of swimming pool standards in Detroit. *Am. J. Public Health.* 1929;20(7):727-733.

Cassan D, Mercier B, Castex F, Rambaud A. Effects of medium-pressure UV lamps radiation on water quality in a chlorinated indoor swimming pool. *Chemosphere* 2006;62(9):1507-13.

Castellan RM, Olenchock SA, Kinsley KB, Hankinson JL. Inhaled endotoxin and decreased spirometric values. An exposure-response relation for cotton dust. *N Engl J Med*. 1987;317(10):605-10.

Castellan RM. Respiratory health effects of inhaled endotoxins: byssinosis and beyond. In: McDuffie H, Dosman J, Semchuk K, Olenchock S, eds. *Agricultural Health and Safety - Workplace, Environment, Sustainability*. Boca Raton, FL: CRC Press, 1995; 97–100.

Causser L, Handzel T, Welch P, Carr M, Culp M, Lucht R, Mudahar K, Robinson D, Neavear E, Fenton S, Rose C, Craig L, Ealey J, Arrowood M, Wahlquist S, Priest J, Xiao L, Lee Y-M, Mirel L, Levy D, Beach MJ, Poquette G, Dworkin M. An outbreak of *Cryptosporidium hominis* infection at an Illinois recreational waterpark. *Epidemiol Infect*. 2006 February; 134(1): 147–156.

Cavestri, RC, Seeger-Clevenger, D. Chemical off-gassing from indoor swimming pools [Internet]. Dublin (OH): American Society of Heating, Refrigerating, and Air Conditioning Engineers; 2008 Ju [cited 2011 Mar 3]. 40 p. Available from: <http://rp.ashrae.biz/page/RP1083.pdf>.

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. Available from: URL: <http://www.cdc.gov/injury/wisqars>.

Centers for Disease Control and National Institute for Occupational Safety and Health. UV Radiation [online]. [cited 2014 Feb 6.] Available from: <http://www.cdc.gov/niosh/topics/uvradiation/>.

Centers for Disease Control and Prevention. Acute illness and injury from swimming pool disinfectants and other chemicals --- United States, 2002—2008. *MMWR Morb Mortal Wkly Rep*. 2011;60(39):1343-1347.

Centers for Disease Control and Prevention. An outbreak of *Pseudomonas folliculitis* associated with a waterslide – Utah. *MMWR Morb Mortal Wkly Rep*. 1983;32(32):425-7.

Centers for Disease Control and Prevention. Chlorine Disinfection Timetable. Last modified May 04, 2016. Accessed July 6, 2016. <http://www.cdc.gov/healthywater/swimming/pools/chlorine-disinfection-timetable.html>.

Centers for Disease Control and Prevention. Communitywide cryptosporidiosis outbreak--Utah, 2007. *MMWR Morb Mortal Wkly Rep*. 2008 Sep 12;57(36):989-93.

Centers for Disease Control and Prevention. Cryptosporidiosis surveillance -- United States, 2011-2012. *MMWR Suppl*. 2015 May 1;64(3):1-14.

Centers for Disease Control and Prevention. Drowning – United States, 2005-2009. *MMWR Morb Mortal Wkly Rep*. 2012;61(19):344-347.

Centers for Disease Control and Prevention. Guidelines for environmental infection control in health-care facilities: recommendations of CDC and the Healthcare Infection Control Practices Advisory Committee (HICPAC). MMWR (2003);52: No.RR-10.

Centers for Disease Control and Prevention. Immediate closures and violations identified during routine inspections of public aquatic facilities - network for aquatic facility inspection surveillance, five states, 2013. MMWR Surveill Summ. 2016 May 20;65(5):1-26.

Centers for Disease Control and Prevention. Microbes in pool filter backwash as evidence of the need for improved swimmer hygiene - metro-Atlanta, Georgia, 2012. MMWR Morb Mortal Wkly Rep. 2013 May 17;62(19):385-8.

Centers for Disease Control and Prevention. Ocular and respiratory illness associated with an indoor swimming pool--Nebraska, 2006. MMWR Morb Mortal Wkly Rep. 2007 Sep 14;56(36):929-32.

Centers for Disease Control and Prevention. Outbreak of gastroenteritis associated with an interactive water fountain at a beachside park--Florida, 1999. MMWR Morb Mortal Wkly Rep. 2000 Jun 30;49(25):565-8.

Centers for Disease Control and Prevention. Pool chemical--associated health events in public and residential settings — United States, 1983-2007. MMWR Morb Mortal Wkly Rep. 2009;58(18):489-93. Accessed 02/27/2011 at <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5818a1.htm>.

Centers for Disease Control and Prevention. Prevalence of parasites in fecal material from chlorinated swimming pools — United States, 1999. MMWR Morb Mortal Wkly Rep. 2001;50(20):410–2.

Centers for Disease Control and Prevention. *Pseudomonas* dermatitis/folliculitis associated with pools and hot tubs--Colorado and Maine, 1999-2000. MMWR Morb Mortal Wkly Rep. 2000 Dec 8;49(48):1087-91.

Centers for Disease Control and Prevention. Respiratory and ocular symptoms among employees of a hotel indoor waterpark resort — Ohio, 2007. MMWR Morb Mortal Wkly Rep. 2009; 58(4):81-85.

Centers for Disease Control and Prevention. Recommendations for Preventing Pool Chemical-Associated Injuries. Accessed at <http://www.cdc.gov/healthywater/swimming/pools/preventing-pool-chemical-injuries.html>.

Centers for Disease Control and Prevention. Surveillance data from public spa inspections — United States, May–September 2002. MMWR Morb Mortal Wkly Rep. 2004;53(25):553–555. Accessed 02/27/2011 at <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5325a2.htm>.



Centers for Disease Control and Prevention. Surveillance for waterborne disease and outbreaks associated with recreational water use and other aquatic facility-associated health events--United States, 2005-2006. *MMWR Surveill Summ.* 2008 Sep 12;57(9):1-29.

Centers for Disease Control and Prevention. Ten leading causes of injury deaths by age group highlighting unintentional injury deaths, United States – 2010. Available online at [https://www.cdc.gov/injury/wisqars/pdf/10lcid\\_unintentional\\_deaths\\_2010-a.pdf](https://www.cdc.gov/injury/wisqars/pdf/10lcid_unintentional_deaths_2010-a.pdf). Accessed on July 5, 2016.

Centers for Disease Control and Prevention. Violations identified from routine swimming pool inspections – selected states and counties, United States, 2008. *MMWR Morb Mortal Wkly Rep.* 2010;59(19):582-587. Accessed 02/27/2011 at <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5919a2.htm>.

Centers for Disease Control and Prevention. Wide-ranging OnLine Data for Epidemiologic Research (WONDER) [online]. (2010) Available from URL: <http://wonder.cdc.gov/mortsql.html>.

Centerwall BS, Armstrong CW, Funkhouser LS, Elzay RP. Erosion of dental enamel among competitive swimmers at a gas-chlorinated swimming pool. *Am J Epidemiol.* 1986;123(4):641-7.

Chambers CD. Risks of hyperthermia associated with hot tub or spa use by pregnant women. *Birth Defects Res A Clin Mol Teratol.* 2006 Aug;76(8):569-73.

Chappell CL, Okhuysen PC, Sterling CR, DuPont HL. *Cryptosporidium parvum*: intensity of infection and oocyst excretion patterns in healthy volunteers. *J Infect Dis.* 1996 Jan;173(1):232-6.

Chen L, Dang B, Mueller C, Dunn K, Almaguer D, Enst J, Otto C. Health hazard evaluation report: investigation of employee symptoms at an indoor waterpark. Cincinnati, OH: US Department of Health and Human Services, CDC, National Institute for Occupational Safety and Health: 2008. Report no. HETA2007-0163-3062. Available at <http://www.cdc.gov/niosh/hhe/reports/pdfs/2007-0163-3062.pdf>.

Cho M, Kim J, Kim JY, Yoon J, Kim JH. Mechanisms of *Escherichia coli* inactivation by several disinfectants. *Water Res.* 2010 Jun;44(11):3410-8.

Chowdhury S, Alhooshani K, Karanfil T. Disinfection byproducts in swimming pool: occurrences, implications and future needs. *Water Res.* 2014 Apr 15;53:68-109.

Cleasby JL and Logsdon GS. Chapter 8: granular bed and precoat filtration. In *Water Quality and Treatment, 5<sup>th</sup> Ed.* McGraw Hill, Inc. NY:1999. ISBN: 0070016593.



Clements W. (Ed.) (2000) *ASHRAE guideline: Minimizing the risk of legionellosis associated with building water systems*. Atlanta, GA: American Society of Heating, Refrigerating, and Air-Conditioning Engineers Inc.

Conference for Food Protection. Standards for Accreditation of food protection manager certification programs as amended by the 2010 biennial Conference for Food Protection (Reviewed April 2010 (8/5/2010). Accessed 02/27/2011 at <http://www.foodprotect.org/media/managercert/Standards%20April%202010%20corrected.pdf>.

Cornett AC, White JC, Wright BV, Willmott AP, Stager JM. Racing start safety: Head depth and head speed during competitive starts into a water depth of 1.22m. *Int J Aquatic Res Ed*. 2010;4:365-378.

Cornett AC, White JC, Wright BV, Willmott AP, Stager JM. Racing start safety: Head depth and head speed during competitive starts into a water depth of 2.29m. *Int J Aquatic Res Ed*. 2011;5:14-31.

Cornett AC, White JC, Wright BV, Willmott AP, Stager JM. Start depth modification by adolescent competitive swimmers. *Int J Aquatic Res Educ*. 2012;6:68-79.

Cornett AC, White JC, Wright BV, Stager JM. Teaching competitive racing starts: Practices and opinions of professional swim coaches. *Int J Aquatic Res Educ*. 2012;6:156-170.

Corona-Vasquez B, Samuelson A, Rennecker JL, Marinas BJ. Inactivation of *Cryptosporidium parvum* oocysts with ozone and free chlorine. *Water Res*. 2002;36(16):4053-63.

Costerton JW. (2007) *The biofilm primer*. Germany: Springer-Verlag.1-97.

Council Directive 98/83/EC on the quality of water intended for human consumption, 1998 O.J. L 330/32.

Cox GR, Broad EM, Riley MD, Burke LM. Body mass changes and voluntary fluid intakes of elite level water polo players and swimmers. *J Sci Med Sport*. 2002;5(3):183-193.

Craik SA, Weldon D, Finch GR, Bolton JR, Belosevic M. Inactivation of *Cryptosporidium parvum* oocysts using medium- and low-pressure ultraviolet radiation. *Water Res*. 2001;35(6):1387-98.

Croll BT, Hayer CR, and Moss S. Simulated *Cryptosporidium* removal under swimming pool filtration conditions. *Water and Environment Journal*. 2007;21:149-156.

Cummings P, Quan L. Trends in unintentional drowning: The role of alcohol and medical care. *JAMA*, 1999;281(23):2198-2202.

Cusimano MD, Mascarenhas AM, Manoranjan B. Spinal cord injuries due to diving: a framework and call for prevention. *J Trauma*. 2008;65(5):1180-5.

Dafoe WA. Appendix: table of energy requirements for activities of daily living, household tasks, recreational activities, and vocational activities. In: Pashkow FJ, Dafoe WA, editors. *Clinical cardiac rehabilitation: a cardiologist's guide*. Baltimore, MD: Williams and Wilkins, 1993; 359-376.

Dang B, Chen L, Mueller C, Dunn KH, Almaguer D, Roberts JL, Otto CS. Ocular and respiratory symptoms among lifeguards at a hotel indoor waterpark resort. *J Occup Environ Med*. 2010;52(2):207-13.

Dawes C, Boroditsky CL. Rapid and severe tooth erosion from swimming in an improperly chlorinated pool: case report. *J Can Dent Assoc*. 2008;74(4):359-61.

Davis TL, Standridge JH, Degnan AJ. Bacteriological analysis of indoor and outdoor water parks in Wisconsin. *J Water Health* 2009;7(3):452-463.

Decker WJ, Koch HF. Chlorine poisoning at the swimming pool: an overlooked hazard. *Clinical Toxicology* (1978); 13(3): 377-381.

Declerck P. (2010) Biofilms: the environmental playground of *Legionella pneumophila*. *Environmental Microbiology*, 12(3), 557-566.

De Laat J, Feng W, Freyfer D, Dossier-Berne F. Concentration levels of urea in swimming pool water and reactivity of chlorine with urea. *Water Res*. 2011; 45(3):1139-1146.

Dharmarajah AH and Cleasby JL. Predicting the expansion behavior of filter media. *Journ. AWWA*. 1986;78(12):66-76.

Dick EC, Shull IF, and Armstrong AS. Surface-subsurface distribution of bacteria in swimming pools – field studies. *Am. J. Pub. Health*. 1960;50:5:689-695.

DIN. Treatment and disinfection of water used in bathing facilities, part 1: general requirements. 1997. Ref. No. 19643-1.

DeVivo MJ. Epidemiology of traumatic spinal cord injury: trends and future implications. *Spinal Cord*. 2012 May;50(5):365-72.

DeVivo MJ, Sekar P. Prevention of spinal cord injuries that occur in swimming pools. *Spinal Cord*. 1997;35(8):509-15.

Donlan RM and Costerton JW. (2002) Biofilms: survival mechanisms of clinically relevant microorganisms. *Clinical Microbiology Review*, 15, 167-93.

Drobnic F, Freixa A, Casan P, Sanchis J, Guardino X. Assessment of chlorine exposure in swimmers during training. *Medicine and Science in Sports and Exercise* (1996); 28(2): 271-274.

Dufour AP, Evans O, Behymer TD, Cantú R. Water ingestion during swimming activities in a pool: a pilot study. *J Water Health*. 2006 Dec;4(4):425-30.

Duma SM, Bisplinghoff JA, Senge DM, McNally C, Alphonse VD. Eye injury risk from water stream impact: biomechanically based design parameters for water toy and park design. *Curr Eye Res*. 2012 Apr;37(4):279-85.

Duong HT, Shahrukh Hashmi S, Ramadhani T, Canfield MA, Scheuerle A, Kim Waller D; National Birth Defects Prevention Study. Maternal use of hot tub and major structural birth defects. *Birth Defects Res A Clin Mol Teratol*. 2011 Sep;91(9):836-41.

EMS World Response Time Standards:

<http://www.emsworld.com/article/10324786/ems-response-time-standards>

Engel J P, Rubin AJ, Sproul OJ. Inactivation of *Naegleria gruberi* cysts by chlorinated cyanurates. *Appl Environ Microbiol*. 1983;46:1157–1162.

Erdinger L, Kirsch F, Sonntag HG. Chlorate as an inorganic disinfection by-product in swimming pools. *Zentralbl Hyg Umweltmed* (1999); 202: 61-75.

Erdinger L, Kirsch F, Hoepfner A, Sonntag HG. Haloforms in spas. *Zentralbl Hyg Umweltmed* (1997);200: 309-317.

Esterman A, Roder DM, Cameron AS, Robinson BS, Walters RP, Lake JA, and Christy PE. Determinants of the microbiological characteristics of South Australian swimming pools. *Appl Environ Microbiol*. 1984 February; 47(2): 325–328.

Falkinham JO 3rd. Mycobacterial aerosols and respiratory disease. *Emerg Infect Dis*. 2003;9(7):763-7.

Favero, MS, Drake CH, and Randall GB. Use of staphylococci as indicators of swimming pool. *Public Health Rep*. 1964 Jan;79:61-70.

Fields BS, Benson RF, Besser RE. *Legionella* and Legionnaires' disease: 25 years of investigation. *Clin Microbiol Rev*. 2002;15(3):506-26.

Fields BS, Haupt T, Davis JP, Arduino MJ, Miller PH, Butler JC. Pontiac fever due to *Legionella micdadei* from a whirlpool spa: possible role of bacterial endotoxin. *J Infect Dis* 2001;184(10):1289-92.

Fitzgerald DA, Wilkinson SM, Bhaggoe R, Beck MH, English JS. Spa pool dermatitis. *Contact Dermatitis*. 1995 Jul;33(1):53.

Fitzgerald GP, DerVartanian ME. Factors influencing the effectiveness of swimming pool bactericides. *Appl Microbiol.* 1967 May;15(3):504-9.

Fitzgerald GP, DerVartanian ME. *Pseudomonas aeruginosa* for the evaluation of swimming pool chlorination and algicides. *Appl Microbiol.* 1969 Mar;17(3):415-21.

Font-Ribera L, Villanueva CM, Gràcia-Lavedan E, Borràs-Santos A, Kogevinas M, Zock JP. Indoor swimming pool attendance and respiratory and dermal health in schoolchildren--HITEA Catalonia. *Respir Med.* 2014 Jul;108(7):1056-9.

Font-Ribera L, Villanueva CM, Nieuwenhuijsen MJ, Zock JP, Kogevinas M, Henderson. Swimming pool attendance, asthma, allergies and lung function in the Avon Longitudinal Study of Parents and Children (ALSPAC) Cohort. *Am J Respir Crit Care Med.* 2011; 183(5):582-588.

Fryar CD, Gu Q, Ogden CL. Anthropometric reference data for children and adults: United States, 2007–2010. National Center for Health Statistics. *Vital Health Stat* 11(252). 2012. Accessed at [http://www.cdc.gov/nchs/data/series/sr\\_11/sr11\\_252.pdf](http://www.cdc.gov/nchs/data/series/sr_11/sr11_252.pdf)

Fuchs J. Chlorination of pool water: urea degradation rate. *Chemiker Ztg. -Chem. Apparatur* (1962);86(3): 76-82.

Gabrielsen MA, Spivey M. Diving injuries: The etiology of 486 case studies with recommendations for needed action. 1990. Nova University Press, Ft. Lauderdale, FL.

Gage SD, Ferguson HF, Gillespie CG, Messer R, Tisdale ES, Hinman JJ, Green HW. Swimming pools and other public bathing places. *Am J Public Health (N Y).* 1926 Dec;16(12):1186-201.

Gagnaire F, Azim S, Bonnet P, Hecht G, Hery M. Comparison of the sensory irritation response in mice to chlorine and nitrogen trichloride. *J Appl Toxicol.* 1994;14(6):405-9.

Galal-Gorchev H, Morris JC. Formation and stability of bromamide, bromimide, and nitrogen tribromide in aqueous solution. *Inorganic Chemistry.* 1965;4(6):899-905.

Gerba CP. Assessment of enteric pathogen shedding by bathers during recreational activity and its impact on water quality. *Quant Microbiol* (2000); 2:55-68.

German Standard DIN 19643, 2012. Treatment of water of swimming-pools and baths. Deutsches Institut Fur Normung E.V. (German National Standard).

Geurtsen W. Rapid general dental erosion by gas-chlorinated swimming pool water. Review of the literature and case report. *Am J Dent.* 2000;13(6):291-3.

Gilchrist J, Parker EM. Racial/ethnic disparities in fatal unintentional drowning among persons aged ≤29 Years – United States, 1999–2010. *J Safety Res.* 2014 Sep;50:139-42.

Gipson K. Pool and spa submersion: estimated injuries and reported fatalities, 2010 Report. May 2010. U.S. Consumer Product Safety Commission. Accessed on 02/27/2011 at <http://www.cpsc.gov/library/foia/foia10/os/poolsub2010.pdf>.

Gipson K. Pool or spa submersion: estimated injuries and reported fatalities, 2011 Report. May 2011. U.S. Consumer Product Safety Commission. Available online at <http://www.cpsc.gov/LIBRARY/FOIA/FOIA11/os/poolsub2011.pdf>.

Glazer CS, Martyny JW, Lee B, Sanchez TL, Sells TM, Newman LS, Murphy J, Heifets L, Rose CS. Nontuberculous mycobacteria in aerosol droplets and bulk water samples from therapy pools and hot tubs. *J of Occup Environ Hyg*. 2007;4(11):831-40.

Glickman RD. Ultraviolet phototoxicity to the retina. *Eye Contact Lens*. 2011 Jul;37(4):196-205.

Glickman RD. Phototoxicity to the retina: mechanisms of damage. *Int J Toxicol*. 2002 Nov-Dec;21(6):473-90.

Goeres DM, Palys T, Sandel BB, and Geiger J. Evaluation of disinfectant efficacy against biofilm and suspended bacteria in a laboratory swimming pool model. *Water Research*. 2004;38(13):3103-3109.

Golaszewski G, Seux R. The kinetics of the action of chloroisocyanurates on three bacteria: *Pseudomonas aeruginosa*, *Streptococcus faecalis*, and *Staphylococcus aureus*. *Water Research* 1994;28(1): 207-217.

Goodgame RW, Genta RM, White AC, Chappell CL. Intensity of infection in AIDS-associated cryptosporidiosis. *J Infect Dis*. 1993 Mar;167(3):704-9.

Goodman M, Hays S. Asthma and swimming: A meta-analysis. *Journal of Asthma* (2008); 45(8): 639-647.

Goutziana G, Mouchtouri VA, Karanika M, Kavagias A, Stathakis NE, Gourgoulisanis K, Kremastinou J, Hadjichristodoulou C. *Legionella* species colonization of water distribution systems, pools and air conditioning systems in cruise ships and ferries. *BMC Public Health*. 2008;8:390.

Gregory R. Bench-marking pool water treatment for coping with *Cryptosporidium*. *Journal of Environmental Health Research*. 2002;1(1):11-18.

Grobe S, Wingender J, & Flemming H. (2001) Capability of mucoid *Pseudomonas aeruginosa* to survive in chlorinated water. *International Journal of Monitoring & Testing and Public Health*, 204, 139-142.

Gunkel K, Jessen HJ. The urea problem in swimming pools. *Z. gesamte Hyg*. (1988); 34(4):248-50.

Haas CN, Karra SB. Kinetics of wastewater chlorine demand exertion. J Water Pollution Control Federation. 1984;56:170-3.

Hanak V, Golbin JM, Ryu JH. Causes and presenting features in 85 consecutive patients with hypersensitivity pneumonitis. Mayo Clin Proc. 2007;82(7):812-6.

Hanna JG, Siggia S. Determination of chloroform and bromoform. Anal Chemistry (1950); 22(4):569-570.

Hendricks D. Water treatment unit processes, physical and chemical. 2006. CRC Press (Taylor & Francis Group), Boca Raton, FL. ISBN: 0824706951.

Hery M, Gerber J, Hect G, Subra I, Possoz C, Aubert S, Dieudonne M, Andre JC. 1998. Exposure to chloramines in a green salad processing plant. Ann Occup Hyg 42:437–451.

Hery M, Gerber JM, Hubert G, Hecht G, Diebold F, Honnert B, Moulut JC. Exposure to metallic catalyst dust: manufacturing and handling of catalysts in the chemical industry. Ann Occup Hyg. 1994 Apr;38(2):119-35.

Hery M, Hecht G, Gerber JM, Gendre JC, Hubert G, Rebuffaud J. Exposure to chloramines in the atmosphere of indoor swimming pools. Ann Occup Hyg 1995;39(4):427-439.

Heymann D. (Ed.) (2004) *Control of communicable diseases manual*. Washington, DC: American Public Health Association, pp. 138-141, 230-231, 383-385.

Hlavsa MC, Roberts VA, Anderson AR, Hill VR, Kahler AM, Orr M, Garrison LE, Hicks LA, Newton A, Hilborn ED, Wade TJ, Beach MJ, Yoder JS. Surveillance for waterborne disease outbreaks and other health events associated with recreational water use — United States, 2007–2008. MMWR Surveill Summ 2011;60:1-37.

Hlavsa MC, Roberts VA, Kahler AM, Hilborn ED, Mecher TR, Beach, MJ, Wade TJ, Yoder JS. Outbreaks of illness associated with recreational water — United States, 2011–2012. MMWR Morb Mortal Wkly Rep. 2015;64(24):668-672.

Hlavsa MC, Robinson TJ, Collier SA, Beach MJ. Pool chemical–associated health events in public and residential settings — United States, 2003–2012, and Minnesota, 2013. MMWR Morb Mortal Wkly Rep. 2014;63(19):427-30.

Hodgson M, and Casey B. (1996) Prevalence of *Legionella* bacteria in building water systems. In *IAQ 96. Paths to Better Building Environments*. Conference of the American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc. Atlanta.

Holzwarth G, Balmer RG, Soni L. The fate of chlorine and chloramines in cooling towers. Water Res. 1984;18:1421–1427.

Howland J, Hingson R, Mangione TW, Bell N, Bak S. Why are most drowning victims men? Sex differences in aquatic skills and behaviors. *Am J Public Health* 1996;86:93--6.

Hurst C, Crawford R, Knudsen G, McInerney M, and Stetzenbach L. (2002) *Manual of environmental microbiology*. Washington DC: American Public Health Association. 184, 186-188.

IARC monographs on the evaluation of carcinogenic risks to humans. Solar and ultraviolet radiation. *IARC Monogr Eval Carcinog Risks Hum*. 1992;55:1-316.

Ibarluzea, J, Moreno B, Zigorraga C, Castilla T, Martinez M, Santamaria J. Determinants of the microbiological water quality of indoor swimming pools in relation to disinfection. *Water Research*. 1998; 33(3): 865-871.

International Standards Organization. ISO/IEC Guide 50:2002. Safety Aspects -- Guidelines for Child Safety. Available at [http://www.iso.org/iso/iso\\_catalogue/catalogue\\_tc/catalogue\\_detail.htm?csnumber=32941](http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=32941).

Jacobs JH, Spaan S, van Rooy GB, Meliefste C, Zaat VA, Rooyackers JM, Heederik D. Exposure to trichloramine and respiratory symptoms in indoor swimming pool workers. *Eur Respir J*. 2007;29(4):690-8.

Jetté M, Sidney K, Blümchen G. Metabolic equivalents (METs) in exercise testing, exercise prescription, and evaluation of functional capacity. *Clin Cardiol*. 1990 Aug;13(8):555-65.

Jerison HJ, Pickett RM. Vigilance: The Importance of the Elicited Observing Rate. *Science*. 1964;143(3609):970-1.

Johnson JD, Overby R. Bromine and bromamine disinfection chemistry. *J of Sanitary Engineering Division Am Soc of Civil Eng*, 1971;97:617-628.

Johnston K, Kinziger M. Certified operators: does certification provide significant results in real-world pool and spa chemistry? *Int J Aquatic Res Ed*. 2007;1(1):18--33.

Jokinen E, Välimäki I, Antila K, Seppänen A, Tuominen J. Children in sauna: cardiovascular adjustment. *Pediatrics*. 1990 Aug;86(2):282-8.

Jones TF, Mcmillian MB, Scallan E, Frenzen PD, Cronquist AB, Thomas S, Angulo FJ. A population-based estimate of the substantial burden of diarrhoeal disease in the United States; FoodNet, 1996--2003. *Epidemiol Infect*. 2007;135:293--301.

Judd SJ, Black SH. Disinfection by-product formation in swimming pool waters: a simple mass balance. *Water Research* (2000); 34(5):1611-1619.



Judd SJ, Bullock G. The fate of chlorine and organic materials in swimming pools. *Chemosphere* (2003); 51:869-879.

Kaydos-Daniels SC, Beach MJ, Shwe T, Magri J, Bixler D. Health effects associated with indoor swimming pools: a suspected toxic chloramine exposure. *Public Health*. 2008 Feb;122(2):195-200.

Kawamura, S. Integrated design and operation of water treatment facilities. 2000. John Wiley and Sons, Inc., NY.

Kenttämies A, Karkola K. Death in sauna. *J Forensic Sci*. 2008 May;53(3):724-9.

Kelsall HL, Sim MR. Skin irritation in users of brominated pools. *Int J Environ Health Res*. 2001 Mar;11(1):29-40.

Keuten MG, Schets FM, Schijven JF, Verberk JQ, van Dijk JC. Definition and quantification of initial anthropogenic pollutant release in swimming pools. *Water Res*. 2012 Jul;46(11):3682-92.

Kim H, Shim J, Lee S. Formation of disinfection by-products in chlorinated swimming pool water. *Chemosphere* (2002); 46:123-130.

King BS, Page EH, Mueller CA, Dollberg DD, Gomez KE, Warren AM. Eye and respiratory symptoms in poultry processing workers exposed to chlorine by-products. *Am J Ind Med*. 2006;49(2):119-26.

Kott Y, HersHKovitz G, Shemtob A, Sless JB. Algicidal effect of bromine and chlorine on *Chlorella pyrenoidosa*. *Appl Microbiol*. 1966 Jan;14(1):8-11.

Korich DG, Mead JR, Madore MS, Sinclair NA, Sterling CR. Effects of ozone, chlorine dioxide, chlorine, and monochloramine on *Cryptosporidium parvum* oocyst viability. *Appl Environ Microbiol* 1990;56:1423-1428.

Kristensen GH, Klausen MM, Hansen VA, Lauritsen FR. On-line monitoring of the dynamics of trihalomethane concentrations in a warm public swimming pool using an unsupervised membrane inlet mass spectrometry system with off-site real-time surveillance. *Rapid Commun Mass Spectrom*. 2010 Jan;24(1):30-4. doi: 10.1002/rcm.4360.

Krutmann J, Béhar-Cohen F, Baillet G, de Agyuavives T, Ortega Garcia P, Peña-García P, Remé C, Wolffsohn J. Towards standardization of UV eye protection: what can be learned from photodermatology? *Photodermatol Photoimmunol Photomed*. 2013 Nov 8.

Kush BJ, Hoadley AW. A preliminary survey of the association of *Pseudomonas aeruginosa* with commercial whirlpool bath waters. *Am J Public Health*. 1980 Mar;70(3):279-81.

Kyriacou DN, Arcinue EL, Peek C, Kraus JF. Effect of immediate resuscitation on children with submersion injury. *Pediatrics*. 1994;94 (2):137-142.

Lagerkvist BJ, Bernard A, Blomberg A, Bergstrom E, Forsberg B, Holmstrom K, Karp K, Lundstrom NG, Segerstedt B, Svensson M, Nordberg G. Pulmonary epithelial integrity in children: relationship to ambient ozone exposure and swimming pool attendance. *Environ Health Perspect* (2004);112:1768-1771.

Lahl U, Batjer K, v Duszeln J, Gabel B, Stachel B, Thiemann W. Distribution and balance of volatile halogenated hydrocarbons in the water and air of covered swimming pools using chlorine for water disinfection. *Water Res*. 1981;15:803-814.

LaKind JS, Richardson SD, Blount BC. The good, the bad, and the volatile: can we have both healthy pools and healthy people? *Environ Sci Technol*. 2010;44(9):3205-10.

Lange KP, Bellamy WD, Hendricks DH, and Logsdon GS. Diatomaceous earth filtration of *Giardia* cysts and other substances. *Journal AWWA*. 1986;78(1):76-84.

Layon AJ, Modell JH. Drowning: Update 2009. *Anesthesiology*. 2009 Jun;110(6):1390-401.

Lazarov A, Nevo K, Pardo A, Fromm P. Self-reported skin disease in hydrotherapists working in swimming pools. *Contact Dermatitis*. 2005 Dec;53(6):327-31.

Lee J, Ha KT, Zoh KD. Characteristics of trihalomethane (THM) production and associated health risk assessment in swimming pool waters treated with different disinfection methods. *Sci Total Environ*. 2009 Mar 1;407(6):1990-7. doi: 10.1016/j.scitotenv.2008.11.021. Epub 2008 Dec 20.

Lee SH, Levy DA, Craun GF, Beach MJ, Calderon RL. Surveillance for waterborne-disease outbreaks--United States, 1999-2000. *MMWR Surveill Summ*. 2002 Nov 22;51(8):1-47.

Letterman RD. Water quality and treatment. 1999. 5<sup>th</sup> Ed. McGraw-Hill, NY.

Leoni E, Legnani PP, Bucci Sabattini MA, Righi F. Prevalence of *Legionella* spp. in swimming pool environment. *Water Res*. 2001;35(15):3749-53.

Leoni E, Legnani P, Mucci MT, and Pirani R. Prevalence of mycobacteria in a swimming pool environment. *J. Applied Microbiology*. 1999;87(5):683-688.

Lévesque B, Duchesne JF, Gingras S, Lavoie R, Prud'Homme D, Bernard E, Boulet LP, Ernst P. The determinants of prevalence of health complaints among young competitive swimmers. *Int Arch Occup Environ Health*. 2006;80(1):32-9.

Lichstein KL, Riedel BW, Richman SL. The Mackworth Clock Test: a computerized version. *J Psychol*. 2000 Mar;134(2):153-61.

- Li DK, Janevic T, Odouli R, Liu L. Hot tub use during pregnancy and the risk of miscarriage. *Am J Epidemiol*. 2003 Nov 15;158(10):931-7.
- Li J, Blatchley ER, 3rd. UV photodegradation of inorganic chloramines. *Environ Sci Technol* 2009;43(1):60-5.
- Li J, Blatchley ER 3rd. Volatile disinfection byproduct formation resulting from chlorination of organic-nitrogen precursors in swimming pools. *Environ Sci Technol*. 2007;41(19):6732-9.
- Lilly PD, Ross TM, Pegram RA. Trihalomethane comparative toxicity: acute renal and hepatic toxicity of chloroform and bromodichloromethane following aqueous gavage. *Fundam Appl Toxicol*. 1997;40(1):101-10.
- Lindstrom AB, Pleil JD, Berkoff DC. Alveolar breath sampling and analysis to assess trihalomethane exposures during competitive swimming training. *Environmental Health Perspectives* (1997); 105(6):636-642.
- Logsdon GS, Symons JM, Hoyer RL, and Arozarena MM. Alternative filtration methods for removal of *Giardia* cysts and cyst models. *Journal AWWA*. 1981;73(2):111-118.
- Logsdon GS and Fox K. Getting your money's worth from filtration. *Journal AWWA*. 1982;74(5):249-256.
- Logsdon GS. Water filtration practices: including slow sand filters and precoat filtration. 2008. American Water Works Association, Denver, CO. ISBN: 9781583215951.
- Loughney E, Harrison J. Irritant contact dermatitis due to 1-bromo-3-chloro-5,5-dimethylhydantoin in a hydrotherapy pool. Risk assessments: the need for continuous evidence-based assessments. *Occup Med (Lond)*. 1998 Oct;48(7):461-3.
- Lyons TB, and Kapur R. *Limax amoebae* in public swimming pools of Albany, Schenectady, and Rensselaer counties, New York: their concentration, correlations, and significance. *Applied and Environmental Microbiology*. 1977;33(3):551-555.
- Mackworth NH. Researches in the measurement of human performance. MRC Spec. Report 268 HMSO, 1950.
- March JG, Gual M, Ramonell J. A kinetic model for chlorine consumption in grey water. *Desalination* (2005); 181:267-273.
- Massin N, Bohadana AB, Wild P, Héry M, Toamain JP, Hubert G. Respiratory symptoms and bronchial responsiveness in lifeguards exposed to nitrogen trichloride in indoor swimming pools. *Occup Environ Med*. 1998;55(4):258-63.
- McCarty CA, Taylor HR. A review of the epidemiologic evidence linking ultraviolet radiation and cataracts. *Dev Ophthalmol*. 2002;35:21-31.

McDowell MA, Fryar CD, Ogden CL, Flegal KM. Anthropometric Reference Data for Children and Adults: United States, 2003–2006. National Health Statistics Reports, 2008;10:1-45.

Mekjavic IB, Gaul CA, White MD, Mittleman KD. Cardiovascular responses during 70 degrees head-up tilt: the effect of elevated body temperature and high alcohol blood levels. *Physiologist*. 1987 Feb;30(1 Suppl):S56-7.

Milton DK. Endotoxin and other bacterial cell-wall components. In: Macher J, ed. *Bioaerosols: assessment and control*. Cincinnati, OH: American Conference of Governmental Industrial Hygienists. 1999; 23–1 to 23–14.

Milton DK, Walters MD, Hammond K, Evans JS. Worker exposure to endotoxin, phenolic compounds, and formaldehyde in a fiberglass insulation manufacturing plant. *Am Ind Hyg Assoc J*. 1996;57(10):889-96.

Milton DK, Wypij D, Kriebel D, Walters MD, Hammond SK, Evans JS. Endotoxin exposure-response in a fiberglass manufacturing facility. *Am J Ind Med*. 1996;29(1):3-13.

Milunsky A, Ulcickas M, Rothman KJ, Willett W, Jick SS, Jick H. Maternal heat exposure and neural tube defects. *JAMA*. 1992 Aug 19;268(7):882-5.

Modell JH. Prevention of needless deaths from drowning. *South Med J*. 2010 Jul;103(7):650-3.

Moraga-McHaley SA, Landen M, Krapfl H, Sewell CM. Hypersensitivity pneumonitis with *Mycobacterium avium* complex among spa workers. *J Occup Environ Health*. 2013;19(1):55-61.

Moretti ME, Bar-Oz B, Fried S, Koren G. Maternal hyperthermia and the risk for neural tube defects in offspring: systematic review and meta-analysis. *Epidemiology*. 2005 Mar;16(2):216-9.

Moritz AR and Henriques FC. Studies of thermal injury: The relative importance of time and surface temperature in the causation of cutaneous burns. *Am J Pathol*. 1947 Sep;23(5):695-720.

Muraca P, Stout J, & Yu V. (1987) Comparative assessment of chlorine, heat, ozone, and UV light for killing *Legionella pneumophila* within a model plumbing system. *Applied and Environmental Microbiology*, 53(2), Retrieved from <http://aem.asm.org/cgi/reprint/53/2/447>.

Murphy JL, Arrowood MJ, Lu X, Hlavsa MC, Beach MJ, Hill VR. Effect of cyanuric acid on the inactivation of *Cryptosporidium parvum* under hyperchlorination conditions. *Environ Sci Technol*. 2015;49(12):7348-55.

Murphy JL, Haas CN, Arrowood MJ, Hlavsa MC, Beach MJ, Hill VR. Efficacy of chlorine dioxide tablets on inactivation of *Cryptosporidium* oocysts. *Environ Sci Technol*. 2014;48(10):5849-5856.

Mustchin CP, Pickering CA. Coughing water: bronchial hyper-reactivity induced by swimming in a chlorinated pool. *Thorax* (1979); 34(5): 682-683.

Nemery B, Hoet PJM, Nowak D. Indoor swimming pools, water chlorination, and respiratory health. *Eur. Respir. J.* (2002); 19: 790-793.

Neveu A, Pouliguen C, Tricard D, and Mallet A. Evaluation of operation and performance of swimming pool filtration plants. *Francaisd'Hydrologie*. 1988;19:2:203-213. (In French).

Newbold J. (2006) *Management of spa pools: controlling the risk of infection*. London, United Kingdom: Health Protection Agency.

New South Wales Department of Health. Public swimming pool and spa pool code of practice. 2010. Available at:  
<http://www.health.nsw.gov.au/environment/publicpools/Pages/default.aspx>.

Nichter MA, Everett PB. Profile of drowning victims in a coastal community. *J Fla Med Assoc*. 1989 Feb;76(2):253-6.

Niquette P, Servais P, and Savoir R. Impacts of pipe materials on densities of fixed bacterial biomass in a drinking water distribution system. *Water Research*. 2000;34(6):1952-1956.

Nordberg GF, Lundstrom NG, Forsberg B, Hagenbjork-Gustafsson A, Lagerkvist BJ, Nilsson J, Svensson M, Blomberg A, Nilsson L, Bernard A, Dumont X, Bertilsson H, Eriksson K. Lung function in volunteers before and after exposure to trichloramine in indoor pool environments and asthma in a cohort of pool workers. *BMJ Open*. 2012 Oct 8;2(5).

Olson RL, Hanowski RJ, Hickman JS, Bocanegra J. Driver distraction in commercial operations. U.S. Department of Transportation Technical report FMCSA-RRR-09-042. September 2009. Report is accessible at <http://www.distraction.gov/research/PDF-Files/Driver-Distracton-Commercial-Vehicle-Operations.pdf>.

Ongerth JE and Hutton PE. Testing of diatomaceous earth filtration for removal of *Cryptosporidium* oocysts. *Journal AWWA*. 2001;93(12):54-63.

Occupational Safety and Health Administration. Bloodborne pathogens and needlestick prevention. Available at: <http://www.osha.gov/SLTC/bloodborne pathogens>. Accessed: 5/1/2013.

Occupational Safety and Health Administration. Bloodborne pathogens and needlestick prevention standards. Accessed on 4/25/2016 at:

<http://www.osha.gov/SLTC/bloodbornepathogens/standards.html>.

Occupational Safety and Health Administration. Coverage of Lifeguards under 29 CFR 1910.1030. July 9, 1993. Corrected 08/16/2007. Accessed July 6, 2016 at

[https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=INTERPRETATIONS&p\\_id=21197](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=21197).

Occupational Safety and Health Administration. Fact Sheet: OSHA's bloodborne pathogen standards. Accessed on 4/25/2016 at:

<http://www.osha.gov/OshDoc/data/BloodborneFacts/bbfact01.pdf>.

Occupational Safety and Health Administration. Personal Protective Equipment standard 1910.132 Accessed March 1, 2014 at

[https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=9777](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9777).

Painter JE, et al. Evolving epidemiology of reported cryptosporidiosis cases in the United States, 1995–2012. *Epidemiol Infect* 2015.

Panyakapo M, Soontornchai S, Paopuree P. Cancer risk assessment from exposure to trihalomethanes in tap water and swimming pool water. *J Environ Sci (China)*. 2008;20(3):372-8.

Paulson D. (Ed.) (2010) *Applied biomedical microbiology: A biofilms approach*. Chapter 8: Matias F, et. al., Disinfection and its influence on biofilm ecology . Chapter 9: Goerers D, Understanding the importance of biofilm growth in hot tubs. Boca Raton, FL: CRC Press.

Pearson W. (2003) "*Legionella* 2003." *Association of Water Technologies Inc.*, Association of Water Technologies, 2003. Web. 19 Aug 2010. Retrieved from <http://www.awt.org/IndustryResources/Legionella03.pdf>.

Pelletier AR, Gilchrist J. Fatalities in swimming pools with lifeguards: USA, 2000-2008. *Inj Prev*. 2011 Aug;17(4):250-3.

Pintar KD, Fazil A, Pollari F, Charron DF, Waltner-Toews D, McEwan SA. A risk assessment model to evaluate the role of fecal contamination in recreational water on the incidence of *Cryptosporidiosis* at the community level in Ontario. *Risk Analysis*. 2010;30(1):49-64.

Pleasant ED, Cheetham RK, Stephens PJ, McBride DJ, Humphray SJ, Greenman CD, Varela I, Lin ML, Ordóñez GR, Bignell GR, Ye K, Alipaz J, Bauer MJ, Beare D, Butler A, Carter RJ, Chen L, Cox AJ, Edkins S, Kokko-Gonzales PI, Gormley NA, Grocock RJ, Haudenschild CD, Hims MM, James T, Jia M, Kingsbury Z, Leroy C, Marshall J, Menzies A, Mudie LJ, Ning Z, Royce T, Schulz-Trieglaff OB, Spiridou A,

Stebbing LA, Szajkowski L, Teague J, Williamson D, Chin L, Ross MT, Campbell PJ, Bentley DR, Futreal PA, and Stratton MR. A comprehensive catalogue of somatic mutations from a human cancer genome. *Nature*. 2010;463;7278;191-6.

Pool Water Treatment Advisory Group (PWTAG). Swimming pool water: treatment and quality standards for pools and spas, 2<sup>nd</sup> Ed. 2009. Micropress Printers, Ltd. ISBN: 0951700766.

Press E. The health hazards of saunas and spas and how to minimize them. *Am J Public Health*. 1991 Aug;81(8):1034-7.

Price D, Ahearn DG. Incidence and persistence of *Pseudomonas aeruginosa* in whirlpools. *J Clin Microbiol*. 1988 Sep;26(9):1650-4.

Quan L, Gore EJ, Wentz K, Allen J, Novack AH. Ten-year study of pediatric drownings and near-drownings in King County, Washington: lessons in injury prevention. *Pediatrics*. 1989 Jun;83(6):1035-40.

Reisen WK, Takahashi RM, Carroll BD, Quiring R. Delinquent mortgages, neglected swimming pools, and West Nile virus, California. *Emerg Infect Dis*. 2008 Nov;14(11):1747-9.

Richardson SD, DeMarini DM, Kogevinas M, Fernandez P, Marco E, Lourencetti C, Ballesté C, Heederik D, Meliefste K, McKague AB, Marcos R, Font-Ribera L, Grimalt JO, Villanueva CM. What's in the pool? A comprehensive identification of disinfection by-products and assessment of mutagenicity of chlorinated and brominated swimming pool water. *Environmental Health Perspectives*. 2010 Nov;118(11):1523-30.

Ritter G, Wolfe RA, Goldstein S, Landis JR, Vasu CM, Acheson A, Leighton R, Medendorp SV. The effect of bystander CPR on survival of out-of-hospital cardiac arrest victims. *Am Heart J*. 1985 Nov;110(5):932-7.

Roberts JE. Ultraviolet radiation as a risk factor for cataract and macular degeneration. *Eye Contact Lens*. 2011 Jul;37(4):246-9.

Roberts JE. Ocular phototoxicity. *J Photochem Photobiol B*. 2001 Nov 15;64(2-3):136-43.

Robinton ED, Mood EW. An evaluation of the inhibitory influence of cyanuric acid upon swimming pool disinfection. *Am J Public Health*. 1967 Feb;57(2):301-10.

Robson HL. Chloramines and bromamines; *Encyclopedia of Chemical Technology*, Kirk-Othmer, 4d ed, Interscience, New York.

Rochelle PA, Upton SJ, Montelone BA, Woods K. The response of *Cryptosporidium parvum* to UV light. *Trends Parasitol*. 2005;21(2):81-7.



Rodhe A, Eriksson A. Sauna deaths in Sweden, 1992-2003. *Am J Forensic Med Pathol*. 2008 Mar;29(1):27-31.

Rose CS, Martyny JW, Newman LS, Milton DK, King TE Jr, Beebe JL, McCammon JB, Hoffman RE, Kreiss K. "Lifeguard lung": endemic granulomatous pneumonitis in an indoor swimming pool. *Am J Public Health*. 1998;88(12):1795-800.

Rosenman KD, Millerick-May M, Reilly MJ, Flattery J, Weinberg J, Harrison R, Lumia M, Stephens AC, Borjan M. Swimming facilities and work-related asthma. *J Asthma*. 2015 Feb;52(1):52-8.

Rowland T. Thermoregulation during exercise in the heat in children: old concepts revisited. *J Appl Physiol*. 2008 Aug;105(2):718-24.

Rycroft RJ, Penny PT. Dermatoses associated with brominated swimming pools. *Br Med J (Clin Res Ed)*. 1983 Aug 13;287(6390):462.

Saita K, Tachikawa M, Tezuka M, Sawamura R. Effects of isocyanuric acid on the polio virus inactivation with hypochlorous acid. *Jpn. J. Toxicol. Environ. Health* 1998;44:442–450.

Saluja G, Brenner RA, Trumble AC, Smith GS, Schroeder T, Cox C. Swimming pool drownings among US residents aged 5-24 years: understanding racial/ethnic disparities. *Am J Public Health*. 2006 Apr;96(4):728-33.

Sanderson W, Weber A, Echt A. 1995. Case reports: epidemic eye and upper respiratory irritation in poultry processing plants. *Appl Occup Environ Hyg* 10:43–49.

Schets FM, Engels GB, Evers EG. *Cryptosporidium* and *Giardia* in swimming pools in the Netherlands. *J Water Health*. 2004 Sep;2(3):191-200.

Schmalz C, Frimmel F, Zwiener C. Trichloramine in swimming pools – Formation and mass transfer. *Water Res*. 2011; 45(8): 2681-2690.

Schoefer Y, Zutavern A, Brockow I, Schäfer T, Krämer U, Schaaf B, Herbarth O, von Berg A, Wichmann HE, Heinrich J, LISA study group. . Health risks of early swimming pool attendance. *Int J Hyg Environ Health*. 2008;211(3-4):367-73.

Seux R. The development of pollution caused by swimmers in swimming pool water in relation to the effect of free chlorine. Translation from *Journal Francais d'Hydrologie* (1988);19(2):151-168.

Seys SF, Feyen L, Keirsbilck S, Adams E, Dupont LJ, Nemery B. An outbreak of swimming-pool related respiratory symptoms: An elusive source of trichloramine in a municipal indoor swimming pool. *Int J Hyg Environ Health*. 2015 Jun;218(4):386-91.

Shaw JW. A retrospective comparison of the effectiveness of bromination and chlorination in controlling *Pseudomonas aeruginosa* in spas (whirlpools) in Alberta. Can J Public Health. 1984 Jan-Feb;75(1):61-8.

Shields JM, Gleim ER, Beach MJ. Prevalence of *Cryptosporidium* spp. and *Giardia* intestinalis in Atlanta metropolitan area swimming pools. Emerg Inf Dis 2008;14:948-950.

Shields JM, Hill VR, Arrowood MJ, Beach MJ. Inactivation of *Cryptosporidium parvum* under chlorinated recreational water conditions. J Water Health 2008;6:513-520.

Shin GA, Sobsey MD. Inactivation of norovirus by chlorine disinfection of water. Water Res. 2008 Nov;42(17):4562-8.

Shields JM, Arrowood MJ, Hill VR, Beach MJ. The effect of cyanuric acid on the disinfection rate of *Cryptosporidium parvum* in 20-ppm free chlorine. J Water Health. 2009 Mar;7(1):109-14.

Shultz JJ, Mianulli MJ, Gisch TM, Coffeen PR, Haidet GC, Lurie KG. Comparison of exertion required to perform standard and active compression-decompression cardiopulmonary resuscitation. Resuscitation. 1995 Feb;29(1):23-31.

Smid T, Heederik D, Houba R, Quanjer PH. Dust- and endotoxin-related acute lung function changes and work-related symptoms in workers in the animal feed industry. Am J Ind Med. 1994;25(6):877-88.

Smith H. Diagnostics. In: Fayer R, Xiao L, eds. *Cryptosporidium* and cryptosporidiosis. 2nd ed. Boca Raton, Florida: CRC Press, 2008:173–207.

Sommerfeld MR, Adamson RP. Influence of stabilizer concentration on effectiveness of chlorine as an algicide. Appl Environ Microbiol. 1982 Feb;43(2):497-9.

Sood A, Sreedhar R, Kulkarni P, Nawoor AR. Hypersensitivity pneumonitis-like granulomatous lung disease with nontuberculous mycobacteria from exposure to hot water aerosols. Environ Health Perspect. 2007;115(2):262-6.

Spack L, Gedeit R, Splaingard M, Havens PL. Failure of aggressive therapy to alter outcomes in pediatric near-drowning. Pediatric Emergency Care 1997;13(2):98-102.

Taylor HR. Ultraviolet radiation and the eye: an epidemiologic study. Trans Am Ophthalmol Soc. 1989;87:802-53.

Teo TL, Coleman HM, Khan SJ. Chemical contaminants in swimming pools: Occurrence, implications and control. Environ Int. 2015 Mar;76:16-31.

Thickett KM, McCoach JS, Gerber JM, Sadhra S, Burge PS. Occupational asthma caused by chloramines in indoor swimming-pool air. Eur Respir J. 2002;19(5):827-32.

Thompson DC, Rivara FP. Pool fencing for preventing drowning in children. *Cochrane Database Syst Rev.* 2000;(2):CD001047.

Tossa P, Deloge-Abarkan M, Zmirou-Navier D, Hartemann P, Mathieu L. Pontiac fever: an operational definition for epidemiological studies. *BMC Public Health.* 2006;6:112.

Trottier A, Brown J. Police health: a physician's guide for the assessment of police officers: 1994. Ottawa, Canada: Canadian Communication Group, 1993.

US Census Bureau. Statistical Abstract of the United States: 2012. Arts, Recreation, and Travel: Participation in Selected Sports Activities 2009. Available at <http://www.census.gov/compendia/statab/2012/tables/12s1249.pdf>. Accessed on April 15, 2016.

US Consumer Product Safety Commission. Spas, hot tubs, and whirlpools: Document # 5112. Accessed 2 March 2010 at <http://www.cpsc.gov/cpscpub/pubs/5112.html>.

US Environmental Protection Agency. Drinking Water Contaminants. Available at: <http://water.epa.gov/drink/contaminants/index.cfm>. Accessed on: 05/01/2013.

US Environmental Protection Agency. National primary drinking water regulations: long term 2 enhanced surface water treatment rule (Proposed Rule). 40 CFR Parts 141 and 142. *Federal Register.* 2003;68(154).

US Lifeguard Standards Coalition. United States Lifeguard Standards: An Evidence-Based Review and Report. *Int J Aquatic Res Edu.* 2011;5(1):61-129. A pdf copy of the final report can be found at [http://www.lifeguardstandards.org/pdf/USLSC\\_FINAL\\_APPROVAL\\_1-31-11.pdf](http://www.lifeguardstandards.org/pdf/USLSC_FINAL_APPROVAL_1-31-11.pdf).

Villanueva CM, Cantor KP, Cordier S, Jaakkola JJ, King WD, Lynch CF, Porru S, Kogevinas M. Disinfection byproducts and bladder cancer: a pooled analysis. *Epidemiology.* 2004;15(3):357-67.

Villanueva CM, Cordier S, Font-Ribera L, Salas LA, Levallois P. Overview of disinfection by-products and associated health effects. *Curr Environ Health Rep.* 2015 Mar;2(1):107-15.

Warren IC, Ridgway J. Swimming pool disinfection. Investigations on behalf of the Department of the Environment into the practice of disinfection of swimming pools during 1972 to 1975. Water Research Centre, Henly-on-Thames, England, 35 pp., Oct 1978.

Weaver WA, Li J, Wen Y, Johnston J, Blatchley MR, & Blatchley ER. (2009) Volatile disinfection by-product analysis from chlorinated indoor swimming pools. *Water Research*, 43(13):3308-3318.

Weisel CP, Richardson S D, Nemery B, Aggazzotti G, Baraldi E, Blatchley E R, Blount BC, Carlsen K, Eggleston PA, Frimmel FH, Goodman M, Gordon G, Grinshpun SA, Heederik D, Kogevinas M, LaKind JS, Nieuwenhuijsen MJ, Piper FC, Sattar SA. Childhood asthma and environmental exposures at swimming pools: State of the science and research recommendations. *Environmental Health Perspectives* (2009); 117: 500-507.

Weng S, Blatchley E. DBP dynamics in a chlorinated, indoor swimming pool under conditions of heavy use: National swimming competition. *Water Res.* 2011;45(16):5241-5248.

Weng AS, Li J, Blatchley III E. Effects of UV254 irradiation on residual chlorine and DBPs in chlorination of model organic-N precursors in swimming pools. *Water Res.* 2012;46:2674-2682.

Wiant C. A snapshot of swimmer hygiene behavior. *Int J Aquat Res Ed.* 2011;5(3):244-245.

Williams A, Schwellnus MP, Noakes T. Increased concentration of chlorine in swimming pool water causes exercise-induced bronchoconstriction (EIB). *Medicine and Science in Sports and Exercise* (2004); 36(5) Supplement abstract 2046.

Wheeler C, Vugia DJ, Thomas G, Beach MJ, Carnes S, Maier T, Gorman J, Xiao L, Arrowood MJ, Gilliss D, Werner SB. Outbreak of cryptosporidiosis at a California waterpark: employee and patron roles and the long road towards prevention. *Epidemiol Infect.* 2007 Feb;135(2):302-10.

White GC. *Handbook of Chlorination and Alternative Disinfectants* 4th edition. John Wiley and Sons, Inc. Hoboken New Jersey 1999.

White JC, Cornett AC, Wright BV, Willmott AP, Stager JM. Competitive swimmers modify racing start depth upon request. *Int J Aquatic Res Educ.* 2011;5:187-198.

Wickramanayake GB, Rubin AJ, Sproul OJ. Inactivation of *Giardia lamblia* cysts with ozone. *Appl Environ Microbiol.* 1984 Sep;48(3):671-2.

Woolf A, Shannon M. Reactive airways dysfunction and systemic complaints after mass exposure to bromine. *Environ Health Perspect.* 1999 Jun;107(6):507-9.

World Health Organization. Chlorine in drinking water background document for development of WHO guidelines for drinking-water quality. WHO/SDE/WSH/03.04/45. 2003. Accessed at [http://www.who.int/water\\_sanitation\\_health/dwq/chlorine.pdf](http://www.who.int/water_sanitation_health/dwq/chlorine.pdf).

World Health Organization (2000). *Environmental Health Criteria* 216. Accessed: 5/20/13. Available at: [http://whqlibdoc.who.int/ehc/WHO\\_EHC\\_216.pdf](http://whqlibdoc.who.int/ehc/WHO_EHC_216.pdf).

WHO. 2006. Guidelines for safe recreational water environments. Vol.2. *Swimming Pools and Similar Environments*. Geneva, World Health Organization, 118 pp.

Wyss O, Stockton JR. The germicidal action of bromine. Arch Biochem. 1947 Feb;12(2):267-71.

Xu J. Unintentional drowning deaths in the United States, 1999–2010. NCHS Data Brief 2014;149:1–8.

Yahya MT, Landeen LK, Messina MC, Kutz SM, Schulze R, Gerba CP. Disinfection of bacteria in water systems by using electrolytically generated copper:silver and reduced levels of free chlorine. Can J Microbiol. 1990 Feb;36(2):109-16.

Yamashita T, Sakae K, Ishihara Y, Inoue H, Isomura S. Influence of cyanuric acid on virucidal effect of chlorine and the comparative study in actual swimming pool waters. Kansenshogaku Zasshi. 1988 Mar;62(3):200-5.

Yamashita T, Sakae K, Ishihara Y, Isomura S, Inoue H. Virucidal effect of chlorinated water containing cyanuric acid. Epidemiol Infect. 1988 Dec;101(3):631-9.

Yamashita T, Sakae K, Ishihara Y, Isomura S, Takeuchi K. Microbiological and chemical analyses of indoor swimming pools and virucidal effect of chlorine in these waters. Nihon Koshu Eisei Zasshi. 1990 Dec;37(12):962-6.

YMCA. Aquatics Safety & Risk Reduction Document, Topic: Aquatic Safety Technology. 2009.

Zuma FN, Lin J, Jonnalagadda SB. Kinetics of inactivation of *Pseudomonas aeruginosa* in aqueous solutions by ozone aeration. J Environ Sci Health A Tox Hazard Subst Environ Eng. 2009 Aug;44(10):929-935.

Zwiener C, Richardson SD, De Marini DM, Grummt T, Glauner T, and Frimmel FH. Drowning in disinfection byproducts? Assessing swimming pool water. Environ. Sci. Technol. 2007 Jan 15;41(2):363-72.

### 7.2.1 Additional Resources

Amagliani G, Parlani ML, Brandi G, Sebastianelli G, Stocchi V, & Schiavano GF (2012) Molecular detection of *Pseudomonas aeruginosa* in recreational water. *International Journal of Environmental Health Research*, 22(1), 60-70.

Barwick RS, Levy DA, Craun GF, Beach MJ, Calderon RL. Surveillance for waterborne-disease outbreaks, United States, 1997-1998. MMWR Surveill Summ, 2000;49 (4):1-35.

Bernard A, Carbonnelle S, Dumont X, Nickmilder M. Infant swimming practice, pulmonary epithelium integrity, and the risk of allergic and respiratory diseases later in childhood. Pediatrics 2007;119(6):1095-103.

Bernard A, Nickmilder M, Voisin C, Sardella A. Impact of chlorinated swimming pool attendance on the respiratory health of adolescents. *Pediatrics* 2009;124(4):1110-8.

Brown MRW and Barker J. (1999) Unexplored reservoirs of pathogenic bacteria: protozoa and biofilms. *Trends in Microbiology*, 7, 46-50.

Cantey PT, Kurian AK, Jefferson D, Moerbe MM, Marshall K, Blankenship WR, Rothbarth GR, Hwang J, Hall R, Yoder J, Brunkard J, Johnston S, Xiao L, Hill VR, Sarisky J, Zarate MA, Otto C, and Hlavsa MC. (2012) Outbreak of Cryptosporidiosis Associated with a Man-Made, Chlorinated Lake; Tarrant County, Texas 2008. *Journal of Environmental Health*, 74:14-19.

Cato C, Simard S, Charest-Tardif G, Rodriguez M, and Tardif R. (2012) Occurrence and spatial and temporal variations of disinfection by-products in the water and air of two indoor swimming pools. *International Journal of Environmental Research and Public Health*, 9:2562-2586.

Centers for Disease Control and Prevention. Fecal Incident Response Recommendations: <http://www.cdc.gov/healthywater/pdf/swimming/pools/fecal-incident-response-recommendations.pdf>.

Centers for Disease Control and Prevention. Surveillance data from swimming pool inspections--selected states and counties, United States, May--September 2002. *MMWR Morb Mortal Wkly Rep*. 2003 Jun 6;52(22):513-516.

Centers for Disease Control and Prevention. Surveillance for waterborne disease and outbreaks associated with recreational water--United States, 2003-2004. *MMWR Surveill Summ*. 2006 Dec 22;55(12):1-30.

Ceramic Tile Institute. Endorsement of improved test methods and slip prevention standards for new flooring. Accessed 07/30/2013 from <http://www.ctioa.org/reports/cof16.html>.

CES Water Quality News. VFD's - how they work and can save you money. Accessed 06/05/2013. [http://www.ceswaterqualitynews.org/CESWaterQualityNews/Entries/2008/1/20\\_VFDs\\_-\\_how\\_they\\_work\\_and\\_can\\_save\\_you\\_money..html](http://www.ceswaterqualitynews.org/CESWaterQualityNews/Entries/2008/1/20_VFDs_-_how_they_work_and_can_save_you_money..html).

Durston, Lee. Design, Construction, and Testing of the Commercial Air Barrier. Accessed at [http://www.irinfo.org/articles/5\\_1\\_2009\\_durston.pdf](http://www.irinfo.org/articles/5_1_2009_durston.pdf).

Effective Lifeguard Rotation-- The Redwoods Group: <http://www.youtube.com/watch?v=Gm0iGL1hWoM>

Hall-Stoodley, L., Costerton, J.W., and Stoodley, P. (2004). Bacterial biofilm: From the natural environment to infectious diseases. *Nature*, 2, 95-106.

John D T. (1993) Opportunistically pathogenic free-living amoebae, p. 143–246. In J. P. Kreizer and J. R. Baker (ed.), *Parasitic protozoa*, vol. 3. Academic Press, Inc., San Diego, Calif.

King CH, Shotts EB, and Porter KG. (1988) Survival of coliforms and bacterial pathogens with protozoa during chlorination. *Journal of Applied Environmental Microbiology*, 54, 3023-33.

Laestadius JG, Dimberg L. Hot water for hand-washing--where is the proof? *J Occup Environ Med*. 2005 Apr;47(4):434-5.

Lewis K. (2001) Riddle of biofilm resistance. *Antimicrobial Agents and Chemotherapy*, 45. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC90417/?tool=pmcentrez>.

Ma P, Visvesvara GS, Martinez AJ, Theodore FH, Daggett PM, and Sawyer TK. (1990) *Naegleria* and *Acanthamoeba* infections. *Review of Infectious Diseases*, 12:490–513.

Miller P. Saving energy at the swimming pool with VFDs. Accessed 06/05/2013. <http://www.controlglobal.com/articles/2008/173.html>.

Narnes, David, "Swimming Pool Chemical Safety" Accessed on 8/27/14 at: [http://www.ehow.com/way\\_5406877\\_swimming-pool-chemical-safety.html](http://www.ehow.com/way_5406877_swimming-pool-chemical-safety.html).

Newsome AL, Baker RL, Miller RD, and Arnold RR. (1985) Interaction between *Naegleria fowleri* and *Legionella pneumophila*. *Infection and Immunity*, 50:449–452.

New South Wales Health Department. *Swimming pool microbiological testing frequency factsheet*. (2010, February 18) Retrieved from [http://health.nsw.au/factsheets/environmental/microbiological\\_test.html](http://health.nsw.au/factsheets/environmental/microbiological_test.html).

Occupational Safety and Health Administration Technical Manual. (1999) Section III. Chapter 7. *Legionnaires' disease*. Washington DC. Retrieved from [http://www.osha.gov/dts/osta/otm/otm\\_iii/otm\\_iii\\_7.html](http://www.osha.gov/dts/osta/otm/otm_iii/otm_iii_7.html).

Praus P. Drinking water disinfection and formation of by-products. *Sborník vědeckých prací Vysoké školy báňské – Technické univerzity Ostrava* (2003); 49(2): 95-102.

Prevention of Drowning: Visual scanning the attention span in lifeguards: <http://www.lifelink.ca/resources/ScanningArticle.pdf>.

Pryor M, Springthorpe S, Riffard S, Brooks Y, and Hou Y. (2004) Investigation of opportunistic pathogens in municipal drinking water under different supply and treatment regimes. *Water, Science, and Technology*, 50, 83-90.

Shin GA, Sobsey MD. Reduction of Norwalk virus, poliovirus 1, and bacteriophage MS2 by ozone disinfection of water. *Appl Environ Microbiol* 2003;69(7):3975-3978.



- Stoodley P, Sauer K, Davies DG, and Costerton JW. (2002) Biofilms as complex differentiated communities. *Annual Review of Microbiology* 56:187–209.
- Thomas V, Bouchez T, Nicolas V, Robert S, and Loret JF. (2004) Amoebae in domestic water systems: Resistance to disinfection treatments and implication in *Legionella* persistence. *Journal of Applied Microbiology*, 97, 950-63.
- Tyndall, R. L., and Dominique, E. L. (1982) Co-cultivation of *Legionella pneumophila* and free-living amoebae. *Journal of Applied Environmental Microbiology*, 44:954–959.
- US Environmental Protection Agency. Final Guidelines regarding “Shock Oxidizer” Products. Accessed on <http://apsp.org/APSPWeeklye-ad/Aug20-08/Shock%20Oxidizer.html>.
- Vyles, T. Growth and evolution of a municipal pool safety and inspection program. *J Environ Hlth*. 2009;71(10):40-44.
- Wolyniak, E.A., Hargreaves, B.R., & Jellison, K.L. (2010). Seasonal retention and release of *Cryptosporidium parvum* by environmental biofilms in the laboratory. *Journal of Applied and Environmental Microbiology*, 76, 1021-1027.
- World Health Organization (2006). Guidelines for safe recreational-water environments, Volume 2: Swimming pools, spas and similar recreational-water environments. Accessed: 5/20/13. Available at: [http://www.who.int/water\\_sanitation\\_health/bathing/bathing2/en](http://www.who.int/water_sanitation_health/bathing/bathing2/en).
- Yoder JS and Beach MJ. *Cryptosporidium* surveillance and risk factors in the United States. *Experimental Parasitology*. 2010;124(1):31-39. Yoder JS, Harral C, and Beach MJ. *Cryptosporidiosis surveillance — United States, 2006–2008*. *MMWR*. 2010;59 (No. SS-6):1-14. Available at: <http://www.cdc.gov/mmwr/pdf/ss/ss5906.pdf>.
- Yoder JS, Blackburn BG, Craun GF, Hill V, Levy DA, Chen N, Lee SH, Calderon RL, Beach MJ. Surveillance for waterborne disease outbreaks associated with recreational water – US, 2001-2002 *MMWR Surveill Summ* 53, 1-22.
- Yoder JS, Harral C, Beach MJ; Centers for Disease Control and Prevention (CDC). Cryptosporidiosis surveillance - United States, 2006-2008. *MMWR Surveill Summ*. 2010 Jun 11;59(6):1-14.
- Zalosh, R. Dust Explosion Fundamentals. Accessed on 8/18/14 at [http://www.nfpa.org/~media/files/proceedings/zalosh\\_presentation.pdf](http://www.nfpa.org/~media/files/proceedings/zalosh_presentation.pdf).

### 7.3 Additional Information

***Air Conditioning Contractors of America (ACCA)***

- 2800 Shirlington Road, Arlington, VA 22206
- [www.acca.org](http://www.acca.org)

***Air Movement and Control Association (AMCA)***

- 30 West University Drive, Arlington Heights, IL 60004
- [www.amca.org](http://www.amca.org)

***American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)***

- 2013 ASHRAE Handbook—Fundamentals:
- <https://www.ashrae.org/resources--publications/handbook/description-of-the-2013-ashrae-handbook--fundamentals>

***Ceramic Tile Institute***

- <http://www.ctioa.org/reports/cof16.html>

***Occupational Safety & Health Administration***

- 200 Constitution Avenue, NW, Washington, DC 20210
- [www.OSHA.gov](http://www.OSHA.gov)

***National Fire Protection Association***

- 1 Batterymarch Park, Quincy, Massachusetts, 02169-7471
- [www.nfpa.org](http://www.nfpa.org)

***Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)***

- 4201 Lafayette Center Drive, Chantilly, Virginia 20151-1219
- [www.smacna.org](http://www.smacna.org)