

Council of State and Territorial Epidemiologists
Position Statement

04-ID-03

Committee: Infectious Disease

Title: Prevention and Control of Recreational Water Illnesses

Statement of the Problem:

Recreational Water Illnesses (RWIs) refer to a spectrum of illnesses associated with swimming in contaminated recreational water venues. Illnesses range from diarrhea, due to pathogens such as *Escherichia coli* O157:H7 and *Cryptosporidium*, to infections of the skin, ear, eye, lungs, and wounds, and chemical exposures. Surveillance of recreational water outbreaks has revealed an increasing trend of gastrointestinal disease outbreaks over the past decade.

There are many factors that contribute to the emergence of RWIs. The use of recreational water venues is extremely high. Statistics show that swimming is the second most popular exercise activity for men and women in the United States with over 368 million person-visits annually. EPA regulation to protect the public's health is only applicable for fresh and marine waters. Yet, surveillance has uncovered how poor pool maintenance and inadequate disinfection has contributed to RWI outbreaks in disinfected venues. In these disinfected venues, a lack of federal regulatory authority, resources, support, and oversight has resulted in disparate regulations and absent research funds across the country.

Contamination of recreational water venues may occur from several sources. Infected animals may defecate in watershed and associated swimming areas or there may be from point source contamination of fresh and marine recreational water. Because swimming venues and interactive fountains provide opportunities for water sharing and high-density communal bathing, fecal contamination may occur from fellow bathers such as diapered and toddler-aged children not yet toilet-trained. Fecal accidents are a common occurrence in pools, sometimes occurring daily. Surveys indicate that 11% of the population has had diarrhea in the past month.

Characteristics of waterborne pathogens that present unique challenges. One such pathogen, *Cryptosporidium*, may survive for days in chlorinated swimming venues due to its environmental stability and extreme chlorine resistance. Some waterborne pathogens also have very low infectious doses and can be shed for weeks after diarrhea ends.

Due to the complex nature of RWIs, any strategy to address it must incorporate a multifaceted and multidisciplinary approach. Such a strategy should include: improved environmental health services to assure proper maintenance of chlorinated venues, improved health education activities to develop and disseminate educational messages concerning healthy swimming behaviors (e.g., don't swim when you have diarrhea), new laboratory and epidemiologic research to answer critical questions, improved surveillance for RWI outbreaks, and additional resources for developing healthy swimming materials and programs. Partnerships between government, institutional, and private institutions are essential to adequately and comprehensively identify and implement such a strategy. To better maximize outcomes, utilize resources, and coordinate efforts, we recommend a national forum that will encourage multidisciplinary partnerships and alliances to develop a national strategic plan for effectively addressing RWI prevention and control.

Statement of the Desired Action(s) to be Taken:

We recommend that the Centers for Disease Control and Prevention (CDC) sponsor a series of national workshops to develop a national strategic plan to address the prevention and control of RWIs. The first 1-2 day workshop will occur before the 2005 CSTE meeting and address RWI transmission in disinfected venues. A second workshop to address RWI transmission in natural water venues may be considered following assessment of the first workshop and would involve some additional partners (e.g., EPA).

Workshop participants will include representatives from state, local, and federal public health institutions (infectious disease investigators, surveillance coordinators, and environmental health specialists from

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pool inspection programs), the healthcare community, the aquatics sector, and other appropriate advocacy groups.

Work groups may address at minimum the following five issues related to the prevention and control of RWIs:

- 1) Environmental health needs
- 2) Health communication needs
- 3) Epidemiology needs
- 4) Laboratory needs
- 5) Industry needs

Other needs may be determined and addressed during the workshop.

Actionable items will include:

- 1) A summary workshop report and recommendations; to be published (e.g., MMWR Recommendations and Reports) within one year of convening the meeting
- 2) A summary workshop report and recommendations to be delivered to the CSTE membership by the 2005 CSTE annual meeting
- 3) Use of the recommendations by CDC, CSTE, and other partners to develop a national strategy for reducing the risk of RWIs associated with disinfected swimming venues

Fiscal Impact:

As the proposal is submitted, the workshops would be sponsored by CDC, there is no fiscal impact anticipated to CSTE or members.

Public Health Impact:

Recreational water illnesses may have a significant impact on the public health of communities. Surveillance shows between 1999-2000, 59 outbreaks of RWIs were reported by 23 states. Up to 2,093 persons were affected with 25 hospitalizations and four deaths. Five of these outbreaks were large-scale in magnitude with between 100-700 persons affected.

The complex nature of RWI outbreaks necessitates comprehensive public health prevention and control measures. This puts a tremendous demand on the public health infrastructure and is disruptive to usual public health activities. An outbreak of *Cryptosporidium* in Douglas County, Kansas in August 2003 apparently began in the local swimming pools and amplified into a community-wide outbreak. Prevention and control measures involved more than 300 daycare facilities, 75 swimming pools, 45 public and private schools, 15 adult living facilities, 90 physicians, the local hospital and emergency room, student health centers at three universities, and two urgent care centers. It is important to point out that while recreational water venues may serve as the initial mode of transmission, they also may amplify any enteric disease circulating in a community and contribute to the magnitude of other community outbreaks of enteric illness.

Developing a national strategic plan to address the prevention and control of RWIs is both timely and necessary. Implementing such a strategy may have a significant impact on public health.

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