



Waterborne Disease & Outbreak Surveillance Reporting

Milestones – Waterborne Disease and Outbreak Surveillance

The [Waterborne Disease and Outbreak Surveillance System](#) (WBDOSS) has tracked waterborne disease outbreaks since the 1970s. The system collects information on when and where the outbreak occurred, the source of contamination, the agent(s) that caused the illness, the number of people who got sick, and the demographic characteristics and symptoms documented on [standardized forms](#). These data have been [routinely reported](#) and informs the development of [Drinking Water Regulations](#) and [Recreational Water Regulations](#).

1920s

- Waterborne disease reporting began in the United States. Some health departments tracked outbreaks before that time.

1970-1979

1971

- CDC, EPA, and CSTE launch the national Waterborne Disease and Outbreak Surveillance System (WBDOSS).
- Foodborne and waterborne disease outbreaks reported to the same surveillance system.
- Waterborne outbreak defined as two or more cases epidemiologically linked to consumption of water from municipal, semi-public, or individual drinking water systems.
- Individual water system defined as wells or springs used exclusively by single residences in areas without municipal systems.

1976

- Redefined individual water systems as wells or springs used by single or several residences or by persons traveling outside populated areas (for example, backpackers).

1979

- Redefined drinking water systems as community systems, noncommunity systems, and individual systems (1976 definition for individual system)

1974

- Added single cases of chemical poisoning (when public health investigation indicated that drinking water was contaminated by a chemical).
- First record of recreational water-associated Pontiac fever involving exposure to a whirlpool.

1978

- Recreational waterborne outbreaks added, which included infections or intoxications but excluded wound infections.
- Foodborne and waterborne outbreaks moved to separate surveillance systems and started reporting separately.

1980-1989

1980

- First record of *Pseudomonas* dermatitis related to whirlpools (hot tub infection)

1988

- MMWR publishes first outbreak surveillance summary on June 1, 1988
- First reported outbreak of *Cryptosporidium* associated with recreational water

1981

- Defined recreational water outbreaks as illnesses due to exposure or unintentional ingestion of fresh or marine water (excluded wound infections)

1989

- Redefined total number of cases to exclude secondary cases
- Added single cases of lab-confirmed primary amebic meningoencephalitis
- Redefined recreational water outbreaks to include illnesses due to inhalation of contaminated water
- Added outbreaks of Pontiac fever associated with whirlpools (excluded outbreaks of Legionnaires' disease)

1990-1999

1991

- Excluded outbreaks caused by contamination of water or ice at point-of-use. These were categorized as foodborne outbreaks
- Redefined recreational water outbreaks to include outbreaks in swimming pools and whirlpools (beyond whirlpool/hot tub dermatitis)

1999

- Added outbreaks associated with occupational uses of water
- Redefined individual water systems to include water not intended for drinking and bottled water
- Redefined recreational water outbreak to include outbreaks in wading pools and interactive fountains

1995

- Prioritized using the estimated case count instead of the actual case count when the study population was randomly sampled or the estimated count was calculated using the attack rate

2000-2009

2001

- CDC launched the Healthy Swimming Program
- Published drinking and recreational water outbreak surveillance summaries separately
- Redefined recreational water outbreak to specify that the epidemiologic evidence must implicate either recreational water or the recreational water setting as the probable source of illness
- Added recreational water air quality events and single cases of recreational water-associated wound infections
- Added Legionnaires' disease outbreaks. Previously, only Pontiac fever outbreaks were included

2003

- Redefined deficiency classification to include additional categories that capture waterborne outbreaks due to point-of-use contamination (except ice contamination)
- Revised definition of etiologic agent to list multiple etiologies when each agent individually represented > 5% of positive specimens
- Redefined illness types to list all types if more than 50% of cases reported a symptom in that category

2005

- Expanded the deficiency classifications for drinking water to include deficiency 13 (Treatment process not expected to remove a chemical contaminant)
- Analyzed single cases of illness (e.g., *Naegleria fowleri*, *Vibrio*, and chemicals for recreational water, and bottled water for drinking water) separately from waterborne outbreaks.

2006

- EPA used surveillance summary data to support development of the 2006 Ground Water Rule (GWR)

2007

- CDC launched the Model Aquatic Health Code initiative based on data from outbreak surveillance
- Revised the criteria used to determine the strength-of-evidence classifications to include molecular epidemiology along with traditional epidemiology
- Added data from legionellosis outbreaks that occurred prior to 2001



2009

- Implemented electronic outbreak reporting through the [National Outbreak Reporting System \(NORS\)](#). This replaced paper-based outbreak reporting conducted since 1971.
- Created the “Other Non-recreational Water” category to replace two previously reported categories: “Water Not Intended for Drinking” and “Water of Unknown Intent.” This category includes outbreaks not associated with public or private drinking water systems, as well as outbreaks for which the intended use of the water is not known. The category does not include outbreaks associated with recreational water venues (e.g., swimming pools), which are reported separately.
- Assigned multiple deficiency categories to *Legionella* outbreaks for the first time, to better describe factors contributing to these outbreaks
- For the first time, the majority of outbreaks associated with drinking water systems were caused by *Legionella*.

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