

Waterborne Pathogens

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Second Edition



**American Water Works
Association**

Science and Technology

AWWA unites the drinking water community by developing and distributing authoritative scientific and technological knowledge. Through its members, AWWA develops industry standards for products and processes that advance public health and safety. AWWA also provides quality improvement programs for water and wastewater utilities.

MANUAL OF WATER SUPPLY PRACTICES—M48, Second Edition

Waterborne Pathogens

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Preface

Waterborne pathogens can cause life-threatening disease in the immunosuppressed populations of the world and illness in the general population. Reports in print and electronic media of recent waterborne outbreaks and emerging pathogens have expanded public awareness of water quality issues. This awareness places greater demands on government agencies and utilities to effectively inform the public about waterborne agents and related health issues. If outbreaks do occur, having accurate information available is a critical need.

The Organisms in Water Committee of the American Water Works Association (AWWA) prepared this manual for water utility management, water quality, and public relations personnel to use as a reference tool. The manual provides scientific information in a concise, readable format that will be helpful to media, city and state government, and water customers who inquire about waterborne pathogenic organisms. Public health and environmental workers will also find it a convenient reference.

This manual includes chapters on waterborne disease outbreaks; water quality in treatment and distribution systems; water quality monitoring, sampling, and testing; and sections for organisms classified as parasite, bacteria, or virus. Each organism is described in terms of its taxonomic classification and biology, the disease it causes, its mode of transmission, its occurrence, the effectiveness of water treatment methods in controlling it, and monitoring recommendations. Each chapter has a reference section, and a detailed glossary is included at the end of the manual.

Pathogenic organisms reviewed in this manual have been identified in epidemiological investigations of waterborne outbreaks or have the potential to cause such outbreaks. The second edition of the M48 manual expands upon the first with new and revised chapters all reviewed by the section chair. This edition reflects current emerging and re-emerging waterborne pathogens, contemporary procedures, and current literature. The revision also includes improved detection and identification methods and a chapter on molecular detection.

The reader is directed to Appendix A, Additional Resources, at the back of the manual. Appendix A is a list of resources and web links for more information on treatment, security, USEPA resources, and related information.

This is the second edition of the *Waterborne Pathogens* manual. AWWA and the Organisms in Water Committee would appreciate any comments on the manual. Contact Elise Harrington, AWWA Water Quality Engineer, at (303) 794-7711, 6666 W. Quincy Ave., Denver, CO 80235.

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