

Organization for Economic Co-operation and Development. *Assessing Microbial Safety of Drinking Water: Improving Approaches and Methods*. World Health Organization: Paris, 2003. (Reviewed by Elizabeth Parsons)

This book is meant to provide guidelines for assessing water quality before the water has been treated and disbursed, mentioning that “end-product testing comes too late to ensure safe drinking water.” It focuses on disease-causing microbes in the water, and uses as examples the 1993 outbreak of cryptosporidiosis in Milwaukee, Wisconsin, and the 2000 outbreak of *E. coli* in Ontario, Canada.

The writers (different for each chapter) enumerate the weaknesses of currently-used detection methods, explaining that most pathogens are still undetectable. The current methods are also quite expensive and time-consuming, none of which facilitates widespread testing of water.

The book goes on to describe the different kinds of microorganisms and bacteria that can be transmitted through water. Rainfall, surface water flow, turbidity, and solid content are listed among the important non-microbial causes of contaminated drinking water. A general (and ancient) principle of finding safe drinking water is to use protected source waters, rather than waters that have a lot flowing into them. This principle was not followed in Milwaukee in the early 1990s, when their drinking water was taken up just downstream of their waste dumping point. Around 400,000 people became infected with cryptosporidiosis from fecal contamination.

The authors also mention sources of pollution to groundwater, such as septic tanks, cesspools, latrines, sewers, and waste treatment sludge dumps. They discuss some different methods of assessing water quality, such as using certain microbes as indicators or using the Presence-Absence test (rather than a more specialized instrument). Because of new technology and advances in science, we are better able to assess water quality. Now these techniques just need to be made policy and put into practice.

Critique

This book is somewhat technical, and doesn't explain certain jargon that might be unfamiliar to the lay reader. However, the authors go into sufficient detail and provide enough graphs and explanations that a reader willing to devote some time and energy would benefit from reading this book. It is rather long, but the different chapters are separate articles by different authors and can be read independently.

This book does not deal specifically with the Willamette River, but it does focus on the direct effects on human health of contaminated and polluted drinking water. The source (the World Health Organization) is reliable and well-known. The information, while more specific in this book than in most reports, confirms what I've read in other places; that many pathogens can travel and infect through water, that most contamination is the result of human activity, and that we can put more stringent and effective methods in place for assessing water quality *before* it's distributed and consumed.

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