

## **Managing Health Risks from Drinking Water**

### **The Walkerton Inquiry Commissioned Paper 7**

D. Krewski, J. Balbus, D. Butler-Jones, C. Hass, J. Isaacs-Renton, K. Roberts, and M. Sinclair

The purpose of this review is to assist the Walkerton Inquiry in making recommendations for changes that will prevent or reduce the risks to population health from contaminants present in Ontario drinking water. This report provides a comprehensive review of the scientific basis for drinking water risk assessment and of strategies for managing these risks. While risks associated with the presence of pathogenic micro-organisms in drinking water are emphasized, risks from chemical and radiological contaminants are also considered. Based on a comprehensive review of current practices in drinking water risk assessment, the scientific basis underlying Ontario's drinking water standards appears comparable to that in other jurisdictions, including the United States, Australia, and the World Health Organization. As of August 2000, drinking water safety in Ontario has been governed by Ontario's *Drinking Water Protection Regulation* and the *Ontario Drinking Water Standards*, the latter of which are based in guidelines developed by the Federal-Provincial Subcommittee on Drinking Water of the Federal-Provincial-Territorial Advisory Committee on Environmental and Occupational Health. Opportunities to further strengthen drinking water safety in Ontario include enhancing population health surveillance, developing and applying new scientific methods for characterizing microbiological risks, improving source water protection, and adopting a total quality management approach to drinking water safety. While the ideal goal of zero risk is unattainable in practice, such enhancements can be expected to minimize potential health risks from drinking water in Ontario.