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A black and white photograph of a group of children riding bicycles on a dirt path in a park. The children are wearing helmets and are smiling. The path is lined with trees, and the background is slightly blurred.

Investigating Human Exposure to Contaminants in the Environment: A Community Handbook

This document has been divided into a series of files for easier downloading from our web site.

Part 1 of 4

Canada



**Investigating Human Exposure to
Contaminants in the Environment:
A Community Handbook**

Our mission is to help the people of Canada
maintain and improve their health.

Health Canada

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FOREWORD

Individuals and communities are becoming more aware of the relationship between their health and the environment.

Investigating Human Exposure to Contaminants in the Environment consists of two handbooks that provide information to assist communities in understanding this relationship. *A Community Handbook* will help you carry out a descriptive exposure assessment and develop a health profile of your community. *A Handbook for Exposure Calculations* describes the general methods followed for calculating human exposure to environmental contaminants. These handbooks have been prepared by the Great Lakes Health Effects Program of the Health Protection Branch, Health Canada.

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INTRODUCTION

Purpose of Handbook

In recent years, there has been a tremendous increase in people's awareness of environmental issues and a growing concern over how their health is affected by their environment. However, there has been little guidance and no standard practical approaches on how they can address these issues in their communities. Consequently, this handbook has been prepared to provide communities with a tool to assess issues of health and environment and to understand the process for gathering and interpreting information when they have such concerns. With this knowledge, communities can have a greater role in the process of investigating environment and health issues that affect them.

*For more information on Remedial Action Plans and Areas of Concern, see **Part B: Background Information**.*

This handbook describes the step-by-step processes that can be followed in performing an exposure assessment and a health profile of a community. It has been prepared primarily for communities in the Great Lakes Basin in Ontario in order to provide Remedial Action Plan teams with guidance to address issues of health and the environment in their Areas of Concern. This is reflected in the case studies described in **Part A** and in the resources identified in **Part C**. However, the methods are general and can be used in any community concerned about people's exposure to environmental contaminants.



What Is an Exposure Assessment?

An exposure assessment is a study of how people in the community come into contact with environmental contaminants. It examines how much of which contaminant people are exposed to. It does so by tracing the pathways from the source of the contaminant through the environment to the people that might be affected. These exposure pathways may lead through the air, the water, the soil, food or any combination of these.

What's realistic to achieve?

The types of assessments described in this handbook represent the first pass at investigating community concerns about exposure to environmental contaminants or the health of its residents. These studies will not likely answer all the questions but they can help communities identify how people are exposed to environmental contaminants, what health issues are important and where gaps in data and knowledge exist. This information will assist them in addressing their concerns in more depth and establishing priorities for more detailed evaluations if deemed necessary.

Who should be involved in these investigations?

A great deal of work and motivation is necessary to complete these types of investigations. Frequently, such investigations are initiated by concerned citizens from the community. A realistic approach is to assemble people with the appropriate skills and expertise to share the workload through a task force or committee. Both lay people and experts will need to work together throughout the process. Committee members may include public health professionals, epidemiologists and statisticians, toxicologists, environmental professionals, municipal politicians, clerks and interested volunteers from the community.

The Contents of the Handbook

Part A outlines the steps in investigating human exposure to contaminants in the environment. It describes the following steps:

How to get started:

- Investigating community concerns.

How to carry out a qualitative Exposure Assessment of contaminants in the environment:

- gathering the existing information;
- identifying all the potential sources of exposure;
- establishing the types, nature and amounts of contaminants involved;
- evaluating the exposure pathways;
- defining the potentially exposed population;
- assessing community exposure; and
- preparing an evaluation.

How to prepare a Community Health Profile:

- gathering the initial information;
- collecting and summarizing existing health information;
- collecting and summarizing other relevant information;
- finding community-based knowledge;
- preparing an evaluation.

How to decide what to do next:

Part B: Background Information contains information on contaminants in the environment, a glossary and an explanation of common units of measurement.

Part C: Information Sources contains further sources of information including: some useful readings, a listing of organizations and agencies that can help, and a brief review of available computer databases.

What Is a Community Health Profile?

A community health profile is a kind of general medical check-up of the community as a whole. By gathering information on the health of many individuals, it is possible to create a picture of the health of the community. Through such a community survey, patterns will emerge: some diseases are more widespread than others, subgroups in the community suffer from different medical problems. By analysing these patterns and comparing them to other information such as lifestyles, places of work and health patterns for other communities or the Canadian population as a whole, the community health profile can pinpoint areas of concern and suggest where environmental contaminants may be a problem.

A STEP-BY-STEP APPROACH

The approach to performing an exposure assessment and a community health profile is summarized in this flow chart. The number in each box heading corresponds to the section in the text where detailed information is presented.

Assessing exposure and preparing a community health profile can be done separately. The decision will depend on the initial community concerns.

