

ENVIRONMENTAL HEALTH IN HOSPITAL

A Practical Guide for Hospital Staff

Part I: POLLUTION PREVENTION

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Canadian Society for Environmental Medicine



The Canadian Society for Environmental Medicine

is an incorporated (1985) non-profit foundation dedicated to advancing human health and well-being through:

1. study of the close relationships between people and their environments and important health effects that may result from these interactions;
2. promotion of environmental stewardship to prevent pollution-related illnesses, in collaboration with other similarly motivated organizations;
3. improvement in access to a comprehensive range of medical and social services for individuals adversely affected by environmental exposures;
4. education of the public and health care professionals about environment-related illnesses; and
5. stimulation of, and involvement in, environmental health research.

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Part I: Pollution Prevention

(Part II: Environment-sensitive Care)

This guide is based on current knowledge and parts of it may be changed as new research findings emerge with regard to the effects of environment on health and effective prevention and remediation strategies. Suggestions are offered which may assist refinement of hospital policies that promote and protect patient and staff health, and optimize care for individual patients with environment-sensitive illnesses. It is acknowledged that the available evidence upon which these suggestions are based varies in quantity, type, and quality.

Some suggestions in this guide may not be suitable for some hospitals.

This publication was developed as a collaborative process over several years, and thus in total may not necessarily represent the views of individual contributors.

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c 2001 Revised Edition

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Environmental Health in Hospital

Acknowledgements

In the 1960's, Dr. J.G. MacLennan, founding member of the Ontario Allergy Society (1958), the American Academy of Environmental Medicine (1965), the Allergy and Environmental Health Association of Canada (1969), and the Canadian Society for Environmental Medicine (1985) originated hospital admission information sheets to assist his allergic and chemically sensitive patients and his medical colleagues.

These information sheets were well-received and formed the basis for the first edition of *Environmental Health in Hospital*, compiled by Dr. L. M. Marshall in 1993 with the input of Dr. MacLennan and other CSEM colleagues. This Guide has been annually updated and expanded as a result of ongoing literature review and feedback from experienced physicians, nurses, other health care providers, and consumers.

The Canadian Society for Environmental Medicine wishes to express appreciation to all who gave ideas to develop this guide, who reviewed it and suggested improvements, and who informally tested it in various sized hospitals during their own or their loved ones' admissions.

Contributions from the following are particularly acknowledged:

Canadian Society for Environmental Medicine Members Drs. Jennifer Armstrong, Jeffrey Balon, Patricia Beresford, Philip Bright, the late Bruce Elliott, Elizabeth Gold, Jozef Krop, Ross Mickelson, John Molot, Marian Zazula.

Allergy and Environmental Health Association Members Elizabeth Hare, Leslirae Rotor, Katherine Auslander, Susan Beck, Chris Brown, Jacqueline Cyr, Kathy Dickinson, Estelle Drolet, Margaret Kelly, Ed Lowans, Shirley Magee, John and Kitty Nelms.

American Academy of Environmental Medicine Members Drs. Gerald Ross and Francis J. Waickman.

Environmental Hypersensitivity Association of Ontario Members Wanda Wilson, Virginia Anderson R.N., Eleanor Johnston, and the late Darlene Koski.

Pollution Probe Environmental Health Programs Director Ian Morton.

Environmental Illness Society of Canada President Judith Spence R.N.

Environmental Health Center, Dallas, Director Dr. William Rea.

Environmental Health Clinic, Women's College Campus, Sunnybrook and Women's College Health Sciences Centre (SWCHSC), Toronto, Drs. Alison Bested, Riina Bray, Frank Foley, Program Coordinator Valerie Lawler, Education Coordinator Nancy Bradshaw.

Women's College Campus, SWCHSC, Toronto, Peri-operative Educator Cathy Isman.

Nova Scotia Environmental Health Centre, Halifax, Director Dr. Roy Fox.

Nova Scotia Environmental Health Centre Steering Committee Member Linda Hilchie.

Environmental Health in Hospital *Canadian Society for Environmental Medicine*
A Practical Guide for Hospital Staff Part I: Pollution Prevention

Table of Contents

Using this guide	1
Introduction	1-2
Key Suggestions Summary	3-4
Administrative Services	5-7
Suggestions Summary	7
Public Relations	8
Suggestions Summary	9
Engineering and Maintenance	10-11
Suggestions Summary	12
Housekeeping and Waste Management	13-14
Suggestions Summary	14
Laundry	15
Suggestions Summary	15
Purchasing and Central Supply	16-17
Suggestions Summary	17
References	18-20

Environmental Health in Hospital *Canadian Society for Environmental Medicine*
A Practical Guide for Hospital Staff Part I: Pollution Prevention

Using this guide:

There are two sections, Part I centred around providing a supportive environment for optimum patient care, and Part II focused on enhancing staff environmental awareness to assist in the provision of optimum care, particularly for those with environment-sensitive illnesses.

An overall summary of suggestions for each part is provided near the beginning of Parts I and II. A summary of suggestions pertaining to each department may be found at the end of the chapter for that department, and may be photocopied and posted on department bulletin boards. The complete guides may be kept in each department for ready reference and/or can be obtained from the designated Environmental Health in Hospital Coordinator(s)(see Administrative Services).

PART I: POLLUTION PREVENTION

Introduction:

Over the last two decades, many countries, including Canada, have noted an increase in childhood asthma (Weiss et al, 1993) that may be related to ground level ozone and fine particles (Bates, 1995; Burnett et al, 1994). Significant associations have been found between respiratory (Burnett et al, 1994) and cardiac (Burnett et al, 1995) admissions to Ontario hospitals and ozone-sulphate air pollution levels, with even very low levels of pollutants increasing admissions (Burnett et al, 1994; Ontario Medical Association, 1998). Association has also been noted between ozone levels and asthma emergency department visits in St. John, New Brunswick (Stieb et al, 1996).

Not only is outdoor air pollution a concern, but also indoor air contamination, because, on average, Canadians spend 90% of the time indoors (Canada Mortgage and Housing Corporation, 1993; Pollution Probe, Canadian Institute of Child Health, 1998). The introduction of energy conservation measures in the 1970's such as 'tightening' buildings and decreasing ventilation rates, in combination with the post-World War II increased indoor use of offgasing synthetic chemical products, have heightened contemporary concern (Kendall, 1994). Canadians are daily exposed to varying quantities of multiple substances in indoor air which are known to impact on human health- for example dust mites, moulds, metals, tobacco smoke, pesticides, and volatile organic compounds such as perfumed products, paints, solvents, and dry cleaning fluid.

It is unknown what percentage of the Canadian population develops symptoms in response to low level exposures to such contaminants as prevalence studies have not yet been mounted in Canada. A National Academy of Sciences workshop suggested that 15 % of U. S. citizens have "increased allergic sensitivity" to these chemicals, "placing them at increased risk of disease (National Research Council, 1987). Statewide telephone surveys of randomly selected adults revealed 6% of adults in California and 2% in New Mexico had been diagnosed with Multiple Chemical Sensitivity or Environmental Illness, and 16% in both states reported they were

Environmental Health in Hospital *Canadian Society for Environmental Medicine*
A Practical Guide for Hospital Staff Part I: Pollution Prevention

“unusually sensitive” to environmental chemicals (Kreutzer et al, 1999). One third of randomly selected adults in different states indicated they were “especially sensitive” to everyday chemicals (Meggs et al, 1996).

Since the introduction, in the 1980's, of universal precautions against the transmission of infectious diseases through contact with bodily fluids, there has been a marked increase in the use of latex gloves, and apparently some breaches of quality management in glove manufacturing processes. Possibly as a result of this combination of circumstances, there have been increased reports of latex-linked symptoms, some life-threatening (Doctor, 1998; Isman and Ryzynski, 1997; Hunt et al, 1996).

As evidence accumulates for adverse health effects of various environmental exposures, hospitals are being compelled, on moral, legal, and cost containment grounds, to anticipate and deal with the needs of patients and staff with environment-sensitive illnesses. Strategies designed to protect the most vulnerable, especially with respect to indoor air quality, afford the additional advantage of providing cleaner air for all patients and staff, including those with unrecognized allergies and other sensitivities.

Savings from a hospital pollution prevention program result from decreased lengths of stay, increased staff productivity and less absenteeism, protection of facilities and equipment, and reduced waste management costs (Woods, 1989).

Some hospitals may already have some aspects of an environmental program in place, and it is hoped the ideas in this guide will be useful to augment previous efforts.

Environmental Health in Hospital *Canadian Society for Environmental Medicine*
A Practical Guide for Hospital Staff Part I: Pollution Prevention

Key Suggestions Summary:

Administrative Services:

- Designate Environmental Health in Hospital Coordinator(s), supported by a Committee composed of a designated staff member from each relevant department. Their mandate is to develop, coordinate, maintain, and evaluate the Environmental Health in Hospital Program, including Pollution Prevention and Environment-sensitive Care components. The Pollution Prevention portion includes latex-safe, scent- and smoke-free environment, integrated pest management, as well as environmentally-aware purchasing and materials management.
- Ask employees involved in direct patient contact or who may touch patient linens or supplies, to wear unscented toiletries and cosmetics.
- Train designated admissions staff to facilitate admission arrangements for patients with environment-sensitive illnesses, in conjunction with admitting physicians.
- Designate a private 'clean room' on medical, psychiatric, and surgical wards, and in emergency, outpatients, and day surgery, equipped with Sensitivity and Latex Allergy Kits.
- Use integrated pest management instead of toxic pesticides and herbicides.
- Purchase the products which are likely to have the least immediate and long-term adverse health and environmental impacts (e.g. stop purchasing mercury-containing equipment wherever possible and substitute existing equipment as quickly as possible)
- Incorporate reduction, reuse, and recycling principles into waste management practices.

Public Relations:

- Collaborate with the Environmental Health in Hospital Coordinator(s) to develop in-house communications materials such as policies and employee information/reminders, and assist department heads with setting up program orientation sessions.
- Develop external communication tools such as logos, fact sheets, newsletters, and telephone scripts.

Engineering and Maintenance:

- Minimize patient exposure to outdoor contaminants by careful location of 'clean rooms' away from sources of known air pollutants.
- Use alternative pest management strategies to eliminate/minimize exposure to toxic pesticides.
- Utilize safe renovation practices including application of less sensitizing, irritant, and toxic materials, containment of volatiles, careful waste disposal, and provision of protective equipment for employees.
- Maintain cleanliness and operating efficiency of mechanical ventilation and cooling systems.
- Repair any roof or plumbing leaks within 48 hours, removing wet materials that could act as substrates for moulds.
- Maintain any room air filtration devices (HEPA and charcoal), and shower head filters (particulate and charcoal).