

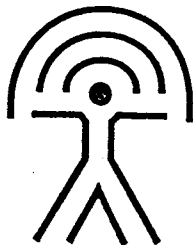
ENVIRONMENTAL HEALTH IN HOSPITAL

A Practical Guide for Hospital Staff

Part II: ENVIRONMENT-SENSITIVE CARE

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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.

Environmental Health in Hospital *A Practical Guide for Hospital Staff* Part II: Environment-sensitive Care (Part I: Pollution Prevention)

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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Environmental Health in Hospital

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In the 1960's, Dr. J.G. Maclellan, 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. Maclellan 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.

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Environmental Health in Hospital *Canadian Society for Environmental Medicine*
A Practical Guide for Hospital Staff Part II: Environment-sensitive Care

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).

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PART II: ENVIRONMENT-SENSITIVE CARE

Introduction:

People with environment-sensitive illnesses may present at hospital not only for treatment of reactions to environmental exposures, but also for injuries, acute or chronic illnesses, and surgery. Besides generating distress for patients, contending with adverse reactions is time consuming and disconcerting for caregivers.

This guide is designed to assist hospital staff in each department to anticipate and meet the needs of those with environment-sensitive illnesses such as allergic and irritative rhinitis/conjunctivitis (Meggs et al, 1996; Wjst et al, 1994), asthma (Becker, 1998), chronic obstructive pulmonary disease (Burnett et al, 1994), latex allergy (Doctor, 1998), multiple chemical sensitivities (Randolph, 1962; Cullen, 1987; Ashford and Miller, 1998; Consensus, 1999), migraine (Smith, 1989) etc., who may have exacerbation of their symptoms on encountering a wide variety of commonly occurring allergens, irritants, or toxins, singly or in combination, even at levels tolerated by the majority of the population (McLellan, 1990; National Research Council, 1992). Allergies, sensitivities, irritations, and intoxications may manifest as symptoms/signs related to any body system with a spectrum of severity from mildly annoying to life-threatening. Triggering of reactions by exposure to environmental substances can result in immediate or delayed symptoms which wane after varying lengths of time when the exposure(s) cease(s) (Randolph, 1965; Thomson, 1985). Children are particularly vulnerable to environmental contaminants because they breathe in pollutants at a faster rate than adults, drink and eat more per kilogram of body weight, and are active and explorative (Snodgrass, 1992; Colborn et al, 1993; Canadian Institute for Child Health, 1998).

When anyone is in a sufficiently vulnerable state to require hospitalization, and especially when persons with allergies and other sensitivities are in hospital, it may be difficult or impossible to determine to what extent onset or exacerbation of symptoms is related to the condition precipitating the admission, illness apprehensiveness, provocative agents in the air, food or water, one particular medication, drug combinations, or overlap of any of these factors. Therefore, it is especially important to protect patients with measures such as those outlined in this guide.

The objectives of environment-sensitive care are to prevent reactions, minimize discomfort, enhance patient trust and confidence, diminish families' fears, decrease cost/length of hospital stay, and increase the likelihood of successful treatment outcome. Some hospitals will have already developed policies including some of the following suggestions. Others will have found it daunting to institute and co-ordinate multi-departmental environmental procedures. Patients' needs vary widely and not all of the proposed actions need to be taken for every patient. Nevertheless, 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.

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Key Suggestions Summary:

Pharmacy:

- Collaborate with Central Supply in compiling the Sensitivity and Latex kits by supplying the pharmaceutical components.
- Stock products at the lowest doses and with the least excipients (fillers, colours, preservatives), to be ordered as needed by medical staff for patients with environment-sensitive illnesses. Arrange with outside pharmacies for quick access to less commonly used preparations.
- Assist staff by obtaining previously tolerated medications as needed for patients with environment-sensitive illnesses.

Nursing, Emergency, Medical, and Surgical Departments:

- 'No scents makes good sense' on person, on clothing, or on breath for all staff who will encounter patients with environment-sensitive illnesses.
- The admitting physician is responsible for ordering a 'clean room', and for notifying the admitting nurse of the necessity to red-flag the patient's arm bracelet, chart, kardex, and 'clean room' door.
- The admitting nurse is responsible for asking all newly admitted patients about past adverse drug reactions, assisting the patient to complete an Adverse Reaction History form, and distributing completed forms to chart, pharmacist, and emergency kit. The admitting nurse is also responsible for ordering a Latex Allergy or Sensitivity emergency kit from Central Supply, which will remain with the patient throughout the hospital stay.
- The Latex Allergy Kit contains some latex-free hospital supplies, and a list of others available, a protective face mask, and emergency treatment medications.
- The Sensitivity Kit contains a charcoal-filled protective face mask, portable oxygen supply with ceramic mask and hard tubing, standard and custom-formulated emergency medications, and information sheets about medication principles and treatment of reactions for individuals with environment-sensitive illnesses.
- Substitute non-scented personal hygiene products and well-rinsed linens, or patients may supply their own.
- Hydrogen peroxide 3% w/v is generally better tolerated as a disinfectant than alcohol or iodine preparations.

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Medications, General Principles:

- Consult with patient and referring physician about which medications at which dosages were previously used successfully. Use these specific preparations whenever possible, and allow continuation of preparations individually formulated to deal with the patient's sensitivities and/or to provide specific metabolic support.
- If new oral medications must be used, order products with the least fillers, binders, dyes, and preservatives.
- Products for IV administration generally have less excipients. IV solutions are best contained in glass bottles, and contamination from plastic tubing may be reduced by flushing 500 ml saline through the tubing and discarding.
- Use Normal saline or Ringer's Solution instead of Dextrose in Water if the patient is corn-sensitive, and only tolerated water in enemas.
- Use antibiotics only if there are urgent clinical indications or cultures confirm the need, and then consider an intravenous administration route, and prophylactic oral lactobacillus acidophilus and bifidus (non-dairy source) to re-populate the gastrointestinal tract.
- Use previously tolerated pain medications and/or preservative-free morphine or meperidine IM or IV, possibly with dimenhydrinate IM. Try TENS, acupuncture, and other modalities to try to reduce the amount of analgesic required, or if analgesics are not tolerated.

Treatment of Reactions:

- Remove patient or substance immediately if the patient smells something which may trigger symptoms, and apply charcoal-filled face mask from Sensitivity Kit (mask may be used prophylactically).
- Treat anaphylaxis using standard protocols.
- For a non-anaphylactic reaction, administer the following from the Sensitivity Kit in sequence until the reaction stops: medications that have previously aborted or diminished that patient's reactions (see Adverse Reaction History Form and individually formulated medications in Kit); oxygen at 6 litres/minute using mask and tubing from the Kit; 1 teaspoon of alkaline powder in a glass of tolerated water; tolerated Vitamin C preparation 1 Gm p.o.; previously tolerated antihistamine p.o.; Plam Milk of Magnesia 30-60 ml with a glass of tolerated water.

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Surgery and Operating Room:

- Prepare the operating and recovery rooms by ensuring there is adequate ventilation, scrubbing with an unscented detergent, and disinfecting walls and equipment with hydrogen peroxide.
- To prepare for the possibility of blood transfusion at elective surgery, take the patient's blood 3 weeks prior to surgery, and store in glass.
- Pre-operatively, evaluate hematological, immunological, renal, hepatic, thyroid, and nutritional parameters and correct any deficiencies.
- Consider hypernutrition with p.o. or IV multivitamins and minerals pre-operatively to assist the patient's capacity to metabolize medications and withstand surgical stress.
- Take a careful food intolerance history, being aware that those with corn intolerance may need IV saline or Ringer's Solution rather than IV D/W, and that those with a history of fruit intolerance (especially banana, avocado, chestnut, or kiwi) may be latex allergic.
- Admit patients with environment-sensitive illnesses early to 'clean room' if there is poor environmental control at home. Maintain post operatively in 'clean room' on tolerated water and less chemically contaminated fluids and foods. Discharge early if there is good environmental control at home and scent-free home care personnel.
- Test surgical scrubs, gloves, sutures and tapes on the skin 3 days pre operatively, and read in 48 hours.
- IV Vitamin C 7.5-15 Gm daily appears to relieve post-operative fatigue, possibly through its antioxidant and free radical scavenging actions.
- Oxygen at 6 l/min for 2 hrs am and pm administered via ceramic mask and hard tubing, appears to speed recovery.

Anaesthesia and Respiratory Care:

- Take a careful history of previous adverse responses to medications, local and general anaesthetics, and foods.
- If possible, use regional anaesthetic (usually cardiac or single dose vials of lidocaine hydrochloride) rather than general.
- If a general anaesthetic is required, schedule first in the day, give 100% oxygen for 5 minutes before IV pentothal. Use nitrous oxide rather than halogenated hydrocarbon gases if possible.

Physio and Occupational Therapy:

- No scents personnel policy is especially important because of potential close contact with patients with environment-sensitive illnesses.
- Use unscented oils and lotions.
- Whenever possible, go to patients in 'clean rooms', or give the first appointment of the day.
- Train staff in the use of the Latex Allergy and Sensitivity Kits.